# Leading the Way: Envisioning the Future of Higher Education
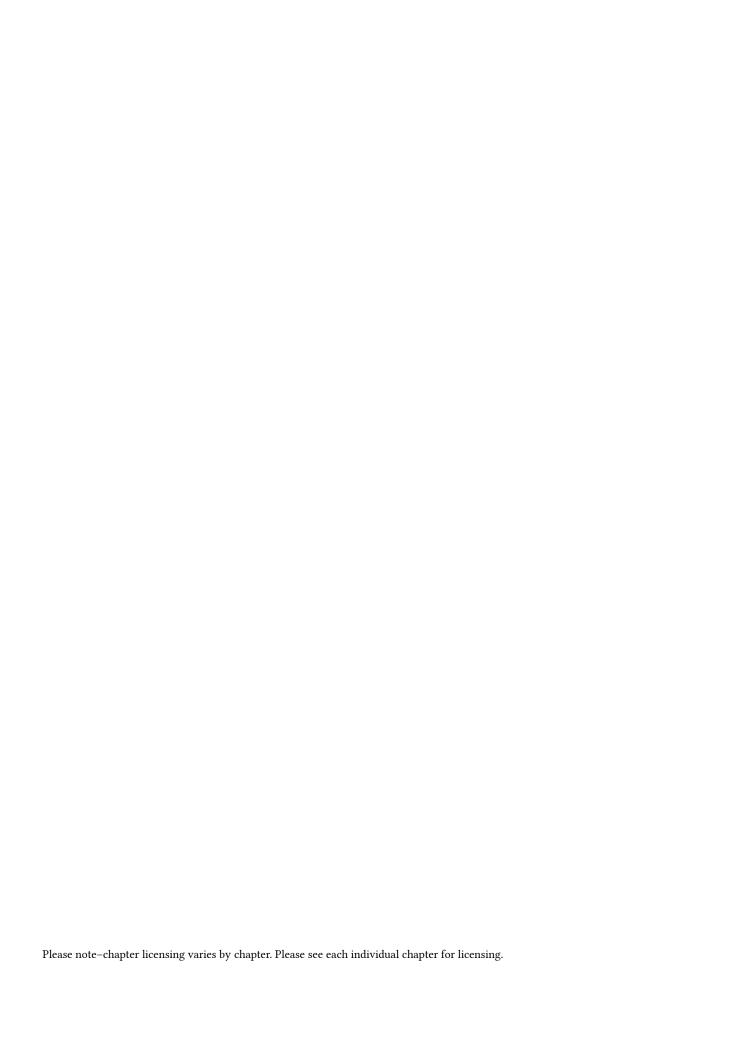
# Leading the Way: Envisioning the Future of Higher Education

## EDITED BY MEGHAN E. NORRIS AND STEVEN M. SMITH

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# SOPHIA COPPOLINO AND FLOOR NUSSELDER

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# Contents

This book is comprised of chapters shared by authors across many lands, and we would like to open with an acknowledgement of our territories.

In a spirit of sharing, we are grateful to the University of Saskatchewan for providing guidance on land acknowledgements. We share their teachings here to help situate our own acknowledgements, and to support you in your own work: https://teaching.usask.ca/curriculum/indigenous_voices/land-acknowledgements/module.php

Editor Meghan Norris is situated on the traditional territory of the Anishinaabeg and Haudenosaunee Peoples. She is grateful to live, learn, and play on these lands. To personalize this land acknowledgement, Meghan would like to share some of the reasons she is grateful for these lands. She enjoys rowing, and has learned that rowing on the Cataraqui River means meeting curious water snakes, and marveling at watching the water plants grow. Walking her dogs, she sees osprey and eagles. Her backyard is full of robins, wrens, woodpeckers, cardinals, crows, chickadees and finches. Being grateful for such beauty means taking responsibility for its care, especially as a settler on these lands. She encourages you to take a moment on your lands to appreciate the beauty and community around you, and consider how you can fulfil your responsibility to sustain it.

Editor Steven Smith is situated in Mi'kma'ki, the the traditional lands of the Mi'kmaq Nation. This territory is covered by the "Treaties of Peace and Friendship" which Mi'kmaq and Wolastoqiyik peoples first signed with the British Crown in 1725. The treaties did not deal with surrender of lands and resources but in fact, recognized Mi'kmaq and Wolastoqiyik title and established the rules for what was to be an ongoing relationship. Steven is grateful to his Indigenous friends and colleagues who have helped him understand the true history of Canada and its Indigenous peoples, and what he has been able to learn about his own family heritage and our collective past.

We would like to express gratitude to the many colleagues who supported the creation of this open access resource. First, we would like to express thanks to the Queen's University Library who provided financial, practical, and collegial support for the creation of this book. Thank you to our many authors who generously have shared knowledge, insights, and expertise. Thank you to our student project coordinators, Sophia Coppolino and Floor Nusselder–this project was possible with sincere thanks to their work. Finally, a heartfelt thank you to Karen Cohen and Kerri Ritchie. This resource only happened because Meghan shared the idea for this book on a conference call, and pitched it as a pipe dream. To her surprise, they said she should do it. Sometimes a spark of enthusiasm from colleagues can start something big. This all serves as a reminder that great colleagues are worth their weight in gold, and that the academic community is something truly special.

Meghan E. Norris and Steven M. Smith

# Applying tactics to develop strategy: envisioning the Future of Higher Education

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## Introduction

Have you ever watched children learning to play soccer or hockey? They tend to *all* chase the ball or puck, with everyone chasing that thing which is most salient for them: the thing that everyone wants. The thing that will score a goal. Experienced players know that chasing the ball or puck is *not* the best *strategy* to scoring a goal, however. You don't go where the puck *is*….you go where the puck is *going*. Taking this perspective allows us to understand that there is always a broader lens that needs to be used to properly envision and achieve the goal.

Just as in sports, successful approaches to higher education require the development and implementation of a more comprehensive *strategy*. Chasing a "thing," such as enrolment targets, a new program, CRM software implementation, although salient and satisfying in the immediate, are alone *unlikely* to win the long game. Institutions, and individuals, need to take a comprehensive approach to higher education: supporting the academic mission by recruiting students, faculty, and staff, and then actively developing and promoting their skills and talent, nurturing their next steps whatever they may be.

What then *is* the academic mission? Academic missions vary by institution type and location. For example, some institutions are research-forward, providing substantial support to basic and applied science and discovery. Some institutions are teaching-forward with less focus on discovery and more on developing students in their respective areas of study. Other institutions may have explicit expectations of supporting their surrounding communities through various types of programming, such as extension programs found in land-grant institutions in the United States. Of course, many institutions carry a mix of these mandates and more. Thus, the path to supporting academic missions can, and should, vary depending on the needs of a given institution.

An important question arises: why should we care about higher education? Higher education is expensive. In

Canada, undergraduate students spend an average of $6,693 CAD each year in tuition alone (Statistics Canada, 2021a), approximately half of graduating undergraduate students have debt, with the average debt being approximately $20,000 CAD (Statistics Canada, 2020), and pursuing higher education requires a significant investment of time. That said, there are many benefits to higher education, also supported by data from Statistics Canada (e.g., Statistics Canada, 2021b). To highlight a few:

- Higher education continues to be associated with higher income (see Statistics Canada, 2024)
- The majority of students who pursue higher education report being happy with their jobs (Statistics Canada, 2019)
- Higher levels of education and income are associated with longer lives, with more time spent in good health (Bushnik et al., 2020)

These trends are not just Canadian. For example, pulling on data from the United States, in 2022, the employment rate is higher for those with post-secondary (87% of those with a bachelor's degree or higher were employed, versus 61% of those who had not completed high school) (National Centre for Education Statistics, 2023).

It is important that we recognize that the benefits of post-secondary extend beyond the individual students who attend, and benefits are greater than employment alone. There are many societal benefits associated with post-secondary including significantly increased civic engagement as demonstrated by increased likelihood to vote (Uppal & LaRochelle-Côté, 2016), increased rates of volunteering and charitable giving (e.g., DeClou, 2014) and increased rates of blood donation (Baum & Paea, 2005). Post-secondary institutions also play a critical role in the Canadian research landscape (e.g., Industry Canada, 2001), develop future highly skilled professionals such as health care workers, provide community access to libraries and scholarly talks, support community engagement activities, offer recreation events and space, and more. Colleges and universities are also important economic contributors to their communities, employing 410,000 people in Canada and generating $40 billion in direct expenditures in 2021 (and much more in indirect expenditures) (Universities Canada, 2024). Similarly, over 3.6 million people worked in post-secondary education in the US in 2023 (Lederman, 2024).

Given the many benefits associated with post-secondary, the wide variety of academic missions, and the many outcomes associated with post-secondary, the question of "strategy" becomes quickly nuanced. We created this book to share thoughts from experts at the front lines of post-secondary education who are looking to what the future holds for our institutions, students, and communities. Strategies should not be built in vacuums. In this volume we aim to outline *some* considerations to be considered when building *strategy* in post-secondary. Our belief is that education is intended to provide a toolbox of knowledge, skills, abilities, and experiences. This toolbox must be both broad enough, and deep enough, to be foundational for future learning and applicable in a wide range of contexts. Employment and careers are obvious outcome goals that many think of with respect to post-secondary, and it should be clear that although important, they are not the only outcomes we should be concerned with. The chapters included in this volume will help to highlight considerations across a variety of contexts with the aim of continually developing an inclusive, enriched, deep, and sustainable post-secondary sector for the *many* positive outcomes associated with post-secondary.

The need for post-secondary to provide a strong and flexible foundation for the future has never been clearer.

We are in a time of rapid local, global, and technological change, and the impacts on individuals and society are significant. By March of 2020, Covid-19 was declared a pandemic by the WHO, and post-secondary institutions, and many other sectors, worked rapidly to pivot online or close completely (see Centers for Disease Control and Prevention, 2023 for a timeline). Political unrest has been salient both locally and globally. For example, there have been concerns with risks of election fraud stemming from the 2016 Presidential election in the USA (Mueller, 2019), there was significant disruption in Ottawa due to the "Freedom Convoy/Convoi de la liberté" in 2022 (Public Safety Canada, 2022), and there are current, significant conflicts happening between Russia and Ukraine, and within Gaza. These are just some of the recent examples of social and political unrest. The skills and knowledge needed at a given moment can quickly change. A broad and deep toolbox allows individuals to effectively identify and use appropriate tools for the context.

In addition to social and political unrest, there have been rapid increases in technological capabilities. For those in post-secondary sectors, Generative AI is likely one of the most salient innovations to hit the sector since the widespread introduction of the internet. On November 30, 2022, ChatGPT was released by OpenAI (n.d.). ChatGPT is an example of Generative AI based in Large Language Models (LLMs), and at the time of this writing, is capable of providing rapid, relatively thorough responses to fairly detailed prompts, that are virtually undetectable as AI generated. On May 13, 2024, ChatGPT-4o was released by OpenAI, including increased abilities related to auditory and visual stimuli, in addition to text-based abilities. Of course, whether this information is accurate and ethical is an ongoing discussion. It *is* however, highlighting the need for critical consumers (and generators) of content. For example, OpenAI released an auditory chatbot that sounded remarkably like actress Scarlett Johansson after she declined willingness to have her voice used in this way (Murphy & McMahon, 2024). During the 2024 MetGala, Artificial Intelligence created a false image of Katy Perry attending the event in a gorgeous dress. It was so realistic that even Katy Perry's mother believed it to be true (Kircher, 2024). On May 24, 2024, Google was widely criticized for a significant error in its artificial intelligence software called AI Overview which integrates with its search engine. AI Overview reported that former US President Obama is Muslim (he is not) (Field, 2024).

It is easy to villainize technology–many uses can be manipulative and promote falsehoods. But, technology can also be used for good. Highlighting the risks and benefits of artificial intelligence, in the below short videos created with the software HeyGen (https://www.heygen.com/), author Meghan demonstrates how "easy" it is to create videos in one language and have them presented as if speaking in another. Note that Meghan does not speak German, and even her German colleague was impressed with her apparent tone and delivery. To be totally clear: the video in German is not Meghan speaking. The software took her English video, manipulated her voice, language, and facial movements, to make it appear as her words were being spoken in German.

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It is easy to see how much benefit can be gained for education through tools such as those that translate videos in authentic ways–suddenly language and intonation are no longer barriers. However, there is a need to be able to verify authenticity. For example, a manipulated video of a professor cancelling an exam could be quite problematic.

Issues related to authenticity open important and necessary conversations about instances of academic integrity in ways we have not yet had to consider. Academic integrity is often thought of as "not plagiarizing," but actually encompasses a much broader array of professional behaviours in academia. Broadly, academic integrity rests on 6 values that should be practiced and upheld within academic contexts: honesty, trust, fairness, respect, responsibility, and courage (International Centre for Academic Integrity, 2021). Misrepresenting thoughts, ideas, and individuals clearly undermines values such as honesty, trust, and responsibility. Importantly, not acting when we know this is happening is a failure to show responsibility and courage. An ongoing frontier is *how to act* when such actions occur. There is a dearth of regulation, especially surrounding technology, and there are grey zones: banning technology is clearly not the answer as it can provide great benefits. Any fulsome strategy in post-secondary must include considerations of integrity.

It must be said that campuses are composed of *people*. Students, and their learning, are paramount when considering strategy. Their development, wellness, success, and learning are overlapping, but distinct, concepts, each requiring care-filled strategy. Yet students are also not the only people on campus. Campuses are rich communities with full- and part-time staff, volunteers, full- and part-time professors on a variety of career tracks, administrators, and additional invested parties. Their development, wellness, and learning are also vital when considering strategy. At the big picture level, campuses are embedded within broader communities, neighbourhoods, cities, and beyond. The opportunities for positive, ongoing, enriching relationships between campuses and communities are vast, benefiting all involved. Post-secondary education and institutions need not, and should not, be an ivory tower. Comprehensive post-secondary strategy should include considerations of the environments in which campus community members live and work, their wellness, and considerations related to the broader communities in which campuses exist.

Leaning into an often-challenging part of strategy, and the implementation of strategy, is the consideration of finances. Healthy, supportive, innovative environments require funds. Published in 2023, the most recent Report of the Advisory Panel on the Federal Research Support System ("The Bouchard Report"), highlights significant concerns with financial support for our research infrastructure. It shares that although Canada is *excellent* in the research space, funding is not sufficient to sustain this excellence. The report calls for strategic vision, and a strategic advisory body.

Concerns with funding are not limited to research. In 2023, the Government of Ontario launched a blue-ribbon panel to explore how to ensure sustainability for post-secondary institutions within Ontario while maintaining student experience (Harrison, 2023). It called for increased financial support from the province,

in collaboration with higher tuition. It also called for increased financial literacy of campus communities (specifically for board members, though presumably we all could use some brushing up in this area), and highlighted financial risks associated with dependence on international students. Importantly, the panel also highlighted that financial sustainability is not one-size-fits-all: different contexts require different solutions. Many other provinces are conducting similar reviews.

To the relief of many, the Federal budget released by the Canadian government in 2024 showed important support for post-secondary education and institutions (Government of Canada, 2024). For example, GST requirements were relaxed to incentivize building of new residences, amendments were included to the Canadian Education Savings Act to support saving for post-secondary, student grants were increased, and importantly, increases for research support were included. That said, although funds for post-secondary, including graduate student support, have been promised by the government (e.g., Government of Canada, 2024), consultants in the field are raising flags that while the dollar amounts sound big, we are not where we should be in terms of funding, and some of the promised funding may not be guaranteed (e.g., Higher Education Strategy Associates, 2024).

So, where does this book fit in? We opened with a focus on needing strategy. Our intention is not to propose a strategy. Indeed, we think that would be unwise. As we noted, strategies must meet the needs of specific cases, and thus will vary. In this book, we hope to share some insights about *tactics* that should be considered for strategy. We intentionally start this book with chapters focused on inclusion, including chapters on [Equity, Diversity, and Accessibility in Post-Secondary Education](), [Ways of Knowing and Higher Education](), [Indigenization and the Future of Post-Secondary Education](), and [Accessibility in Higher Education](). We then transition into chapters focusing on supporting the *people* in our campus communities, with chapters including [The Developmental Perspective on Youth in Post-Secondary Education](), [Promoting Post-Secondary Student Well-Being, Campus Mental Health: A Whole Community Responsibility](), and [Transforming Higher Education: A Case for Transformational Leadership](). We then move to physical and financial considerations with chapters in [The Role of the Physical Campus for Productivity and Health](), and [Financing Canadian Colleges and Universities in the 21st Century](). Next we turn to academic issues with chapters including [The Essentiality of Academic Integrity in an Increasingly Disrupted and Polarized World](), [Re-Imagining Education for an Uncertain Future: Can Technology Help Us Become More Human?](), [What are Large Language Models Made of?](), and [Beyond the Paywall: Advocacy, Infrastructure, and the Future of Open Access in Canada](). We conclude this volume by highlighting the importance of community in our campuses with chapters on [Envisioning Public Policy and Practices for Experiential Learning in Post-Secondary Education](), and [Building Better Health Sciences Education]().

Importantly, this book is not the end, but a start. We look forward to future editions that include *additional* necessary topics when building strategy related to post-secondary. For example, chapters on specifics related to the science and practice of learning and teaching, the importance of interdisciplinary work, the "why" of grading and assessment methods, governance structures, life and career development, upskilling, transfer credit mobility, research funding, and more.

As we close, we want to highlight some features of this book. Chapters each have their own URLs. This means that you can easily share individual chapters by way of URL as you wish, in addition to sharing the main link for the book. This book is open access, with most chapters being protected either under CC-BY

4.0 or CC-BY-NC 4.0 licenses. This means you are encouraged to share broadly (please see specific licensing associated with each chapter), and there are no costs to using this book. Content has been generously shared by authors, who retain copyright of their chapters, with the intention of removing barriers to accessing content. We ask that you cite chapters in future work so authors can receive academic credit for their work. To help with this, recommended citations are included at the bottom of each chapter. To learn more about creative commons licensing permissions, we recommend visiting https://creativecommons.org/share-your-work/cclicenses/ (Creative Commons, n.d.).

We want to share a heartfelt thanks at this point. This book was created *incredibly quickly* thanks to funding received from the Queen's University Library team in their support of open educational resources. No authors were paid for their chapters in this book. That this book came together so quickly, with such incredible topics covered, is truly a testament to the academic network in Canada. Many authors in this book received "cold emails" asking whether they would be willing to share their knowledge, and we were humbled that they, and closer colleagues, agreed to participate. Writing a chapter is harder and more time consuming than it sounds–to our dear authors, thank you. We hope you are proud of this resource, and the conversations we hope it will facilitate.

This project could not have come to fruition without our student project coordinators. Sophia Coppolino and Floor (Flo) Nusselder were essential team members and were truly the glue that helped keep pieces (and email chains) together. The skill and professionalism that these two soon-to-be-graduates demonstrated in a large-and-fast project is testament to the incredible folks we have coming through our post-secondary systems. As you both graduate, please know that you have a community cheering you on. Teamwork really does make the dream work–thank you for being a part of it!

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Steven Smith

Katelynn Carter-Rogers; Steven M. Smith; Chiedza C. Chigumba; and Vurain Tabvuma

# The Future of Equity, Diversity, Inclusion, and Accessibility in Post-Secondary Education

Katelynn Carter-Rogers[1,2], Steven M. Smith[2], Chiedza Chigumba[2], and Vurain Tabvuma[2]

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## Introduction

In this chapter we will discuss some of the many ways in which equity, diversity, inclusion, and accessibility (EDIA) are being considered in post-secondary education, and how the role of EDIA is likely to evolve over the coming years. We will start with an examination of the shift in the nature of the people at academic institutions over time, both in terms of students, and the faculty teaching them. Next, we will discuss what we mean by EDIA, how the definitions of EDIA have changed over time in general within the literature, and how post-secondary education (PSE) is leading the way in many instances. We will address the role and need for inclusive practices in post-secondary education and the benefits of EDIA for students, faculty, and institutions. Finally, we will take an educated guess at what the future of EDIA in PSE will bring, and how institutions can prepare for, facilitate, and manage those changes.

## Student Demographics Over Time

There are now over 2.2 million students at colleges and universities in Canada, and that is more than double the number that attended in 1980 (Statistics Canada, 2023). Despite a push to increase access to PSE for Indigenous students in Canada, Indigenous youth were half as likely (37%) to have taken some form of post-secondary education as non-Indigenous youth (72%) (Layton, 2023). Interestingly, although there is already significant diversity in Canadian undergraduates, we see that some groups are over-represented compared to the general Canadian population (e.g., South Asian, Chinese, Korean) some are essentially at par with population (e.g., Arab, Southeast Asian, Japanese) and some are lower than would be expected by population (Latin American, Black, Filipino);  overall, some 30% of PSE students identify as a visible minority (Brunet & Galarneau, 2022). Over 400,000 of the students (or 18%) are international, which is 10 times the number of

international students since 1980 (Statistics Canada, 2023). Students with disabilities also face challenges, with only 42% achieving some level of PSE (Furrie, 2017).

## How is EDIA operationalized?

Seeing how the university population has changed and become more diverse over the last several decades, it has become apparent that resources and course content is not as relevant or relatable to everyone who is within the learning environment, there may also be cases where the content is not applicable, or generalizable for all populations equally. How do we ensure that everyone who is experiencing our learning environment fundamentally feels like they belong within this space and that it is relevant to them? That is what the intention of implementing EDIA within organizations and institutions is meant to do. There has been an evolution of EDIA, drastic changes to the way it is talked about (transitioning from EDI to EDIA, and other abbreviations) (see Table 1), and also changes within the literature describing what the best way to work with diverse people.

**Table 1**
*Common Abbreviations used within the Equity, Diversity, Inclusion, and Accessibility space*

| Common Abbreviations | |
| --- | --- |
| EDI | Equity, Diversity, & Inclusion |
| EDIA | Equity, Diversity, Inclusion, & Accessibility |
| EDIRA | Equity, Diversity, Inclusion, Reconciliation, & Accessibility |
| EDII-A | Equity, Diversity, Inclusion, Indigeneity, & Accessibility |
| D&I | Diversity & Inclusion |
| DEI | Diversity, Equity, & Inclusion |
| IDEA | Inclusion, Diversity, Equity, & Accessibility |
| DEIB | Diversity, Equity, Inclusion, & Belonging |
| JEDI | Justice, Equity, Diversity, & Inclusion |
| JEDDI | Justice, Equity, Diversity, Decolonization, & Inclusion |

Prior to the 1980's, organizations focused on equality, and equal opportunity for the groups that were legally protected from discrimination, which focused more broadly on race and sex (Kelly & Dobbin, 1998). Historically, shifts towards equity have come with climates that have necessitated uncomfortable conversations. When *diversity* became the focus, this brings attention to the importance of how it can benefit the organization overall (Trawalter et al., 2016). Progress in achieving diversity goals has come because of social movements driving change and causing society to recognize the lived experiences of racialized groups (Ray & Melaku, 2023). If left to voluntary targets, EDIA progress would be slow (Cukier, 2023) and inequalities would persist. Over the years, we have seen significant changes to how diversity is considered, including gender identity, ability, personality characteristics, religion, and ethnicity, just to name a few (Kirby et al., 2023; Pascual et al., 2023; Unzueta & Binning, 2012).

There has also been discourse in the *inclusion* literature (Shore et al., 2011), calling for a shift from measuring diversity to actively considering how to create an inclusive space for *everyone* (Ferdman, 2014; Mor Barak, 2022; Nishii & Rich, 2013; see also Tabvuma et al., 2023). However, a focus on making the majority feel comfortable risks experiencing a repeat of history when calls for EDIA were widely devalued and labelled as ineffective (e.g., Chambers et al., 2023; Chilton et al*.,* 2022; Winnick, 2010). It is important for all sides to be heard; inclusion is not about the majority deriding the realties that equity seeking groups face. It is just as important to have conversations about uncomfortable topics with a goal to foster a sense of belonging and not silence the voices of those whose lived experiences are negatively impacted by policies aimed at maintaining the status quo. Myth busting is one way to steer perceptions away from misconceptions and towards common understanding of the EDIA issues in PSE (Chambers et al., 2023).

These issues show the importance for considering more than just recruitment initiatives when seeking to promote inclusion. Research by Gebert et al. (2017) highlights that during transitions, insufficient tolerance for diverse populations among leadership can create discomfort and unwelcoming atmospheres and lower retention. Despite extensive discourse on EDIA, numerous organizations still lack diversity, particularly within their leadership ranks (Statistics Canada, 2021a; 2021b). Despite decades of trying to enhance diversity, significant wage gaps and underrepresentation persist within organizations, signaling systemic barriers to acceptance, cultural transformation, and sustained diversity. With the backlash against race-based admission approaches linked to affirmative action, PSE institutions in the USA are now expected to seek diversity in their admissions process through factors other than race (Savage, 2023). It remains to be seen how much of an impact this will have on the visible diversity of students in PSE and the workforce. Backlash and myths are effective tools in silencing the voices of those who would otherwise advocate against self-segregation in favor of inclusive approaches that foster a sense of belonging; over time, they can breed assimilation as people conform (Shore et al., 2011) to be accepted as insiders for personal and professional. Recognizing these challenges, scholars have begun advocating for a paradigm shift from merely studying diversity to focusing on inclusion (Carter-Rogers et al., 2022a; Ferdman, 2014; Mor Barak, 2022; Nishii & Rich, 2013; Shore et al., 2011; Smith, et al., 2022).

Issues such as unwelcoming environments and underrepresentation at least partly stem from leadership using these terms interchangeably, and thus missing important considerations when it comes to facilitating inclusion. When "diversity" is discussed, most are referring to the people's "affinity" that makes them different or unique within a space (Star, 2022). This is problematic because these diverse traits become a metric that is measured as an outcome of success, instead of adjusting or making change within an environment. These affinities are also typically assessed visibly, which then negates *hidden* or *invisible* diversity. The Canadian Commission for United Nations Educational, Scientific, and Cultural Organization (UNESCO) has done a great job explaining and defining EDIA as it impacts the Canadian education system and showing that each dimension needs to be considered differently (see Table 1).

**Table 2**
*Inclusion, Diversity, Equity & Accessibility (IDEA) Good Practices toolkit (Baker & Vasseur, 2021).*

| Inclusion | Equity |
|---|---|
| Inclusion is ensuring all individuals are equally supported, valued, and respected. This is best achieved by creating an environment in which all individuals (students, faculty, staff, and visitors) feel welcomed, safe, respected, valued, and are supported to enable full participation and contribution. | Equity is the fair treatment and access to equal opportunity (justice) that allows the unlocking of one's potential, leading to the further advancement of all peoples. The equity pursuit is about the identification and removal of barriers to ensure the full participation of all people and groups. |
| **Diversity** | **Accessibility** |
| Diversity is the wide range of attributes within a person, group or community which makes them distinctive. Dimensions of diversity consider that everyone is unique and recognizes individual differences including ethnic origins, gender (identity, expression), sexual orientation, background (socio-economic status, immigration status or class), religion or belief, civil or marital status, family obligations (i.e., pregnancy), age, and disability. | Accessibility is the provision of flexibility to accommodate needs and preferences, and refers to the design of products, devices, services, or environments for people who experience disabilities. It can also be understood as "a set of solutions that empower the greatest number of people to participate in the activities in question in the most effective ways possible." |

What is not discussed within Table 2 but is starting to surface within the EDIA literature, is the idea around belonging, or belongingness (Kirby & Zhang, 2024). Although Shore et al. (2018) begins to speak on the sense of belonging in the context of inclusion, and the uniqueness that one feels within their environment leading to them ultimately being retained, the concept from an EDIA perspective is still new in the organizational context. Belonging is where the PSE literature is more informed on implementing change within the academic space.

## Value of EDIA in Post Secondary Education

In 1998 the U.S. Court of Appeals ruling in *Wessmann v Gittens (1998)* struck down the school's race-based admissions quota that reserved half the seats for students from diverse racial backgrounds; in the 1997-98 school year this half was comprised of 18 White, 13 Black, 9 Asian-American and 5 Hispanic students (*Wessmann v. Gittens*, 1998). Similarly, in the *Students for Fair Admissions, Inc. v. President and Fellows of Harvard College* (2023) race-based considerations were ruled unconstitutional by the Supreme Court. The key takeaway highlighted from media articles was the need to prove the value of diversity (Axtman, 1998; Lewin, 1998; Liptak, 2023). At the PSE level, the value of EDIA comes through when tertiary education aids in developing individuals who can work in teams with, or manage people from, diverse backgrounds. Diversity in higher education fosters interactions that bring value to the development of strategy through diverse thought. Furthermore, diversity creates room for the generation of innovative ideas (Díaz-García et al., 2013) by bringing together minds, perspectives and experiences from different backgrounds and identities.

At PSE institutions, the diverse student population brings together diversity in thought and experience at an advanced level of maturity compared to high school. Students who come from different backgrounds often come with diverse ways of learning and differing notions of what is expected of them both in the classroom and in their academic work (Nelson, 1996). What is often presumed to be lack of motivation, means or ability can also be a function of differences in how students learn, including attitudes towards peer-learning, or differences in how the standard of their high school education prepared them for college (Nelson, 1996; Treisman, 1992). Often students from different backgrounds, with different levels of college preparation, are expected to know and understand the expectations of their professors (Nelson, 1996), and supporting student diversity involves providing opportunities and resources for equitable learning. This may include taking time to set expectations and ensuring understanding using exercises that are reviewed collectively (Nelson, 1996). Creating opportunities for regular peer-learning has been found to be beneficial for students who come from backgrounds that discourage such a strategy as it may be misunderstood as cheating, or from social environments where such a strategy may risk students facing bullying for appearing as being nerdy (Nelson, 1996). Notably peer learning through study groups is a strategy that other successful student groups regularly make use of, such as Asians and those from social environments where peer learning was encouraged, (Nelson, 1996).

## EDIA and Sense of Belonging in PSE

When creating pipelines within the education system so that more diverse students can access PSE and subsequently enter the workforce, we must consider their integration into this space (Tienda, 2013). Students who are experiencing more educational barriers (i.e., first generation students, Black and Indigenous students,

students living with disabilities, working students, etc.) experience the most uncertainty in their sense of belonging within PSE, leading to feelings of isolation (Brooms, 2020; DeRossett et al., 2021; Fong et al., 2021). We see that the students' sense of belonging has a significant impact on whether they are successful in their integration.

Students with increased connection to the environment have increased sense of belonging (Astin, 1994; 2007; Malone et al., 2012; Schachner et al., 2019; Slaten et al., 2018; Tinto, 1993; 2010). Astin's (1994) Inputs-Environment-Output (I-E-O) model allows for consideration of students' demographic backgrounds when implementing and assessing the outcomes for successful transition into PSE. These approaches are essential to academic success; the integration into campus life is just as important as obtaining high grades (Astin, 1994; 2007). A student's failure to integrate into the campus culture, both socially and intellectually, is a factor in why students struggle and/or fail in PSE (Tinto, 1993; 2010). Carter-Rogers, et al. (2022b) found that there were clear educational barriers being experienced by the diverse student population ranging from financial hardships, housing insecurity, lack of social support, generational trauma, family substance abuse, and negative relationship dynamics. These barriers, though out of the control of the institution, put into perspective the importance of sense of belonging, and continued social support systems needed within the PSE environment. Resources on campus must exist so that students who are from more diverse backgrounds can find a sense of belonging within the educational space, ensuring they can stay and feel safe within the academic environment.

### Programming to Facilitate Belonging for Students

Student transitions are hard, and in most cases, it is not the challenge of doing well in class, it is the adjustment to the academic culture that is most impactful. Geography, gender, ethnic background, and socioeconomics all influence this outcome. In PSE institutions, graduation rates vary dramatically from close to 90% to well under 50% — and that is just from those who are reporting statistics (see MacLean's, 2018).

Most colleges and universities in North America have specific programs put in place to help students transition from high school (or other institutions) to their programs. Indeed, there are multiple national (e.g., the Annual Conference on First Year Experience; the National Student Success Conference) and regional (e.g., the Atlantic Association of College and University Student Services; the California Strengthening Student Success Conference) conferences and organisations that specifically aim to support student transition and success. At each of these conferences (as illustrated in their associated journals and newsletters) there are countless programs being run every year, all with the goal of easing the transition of students from where they were, to where they are at. In a recent survey of Canadian first year experience and students in transition programming being offered at Canadian colleges and universities, every institution responding offered more than one program for students to support their acclimation to academia and the institution (see Smith, et al., in press).

First-year experience and students in transition programs take a wide variety of forms, including first year seminars to support student academic and writing skills,  programs integrated with required academic courses, programs for transfer students, programs for international students, mental health programming, Indigenous student programming, programs for racialized students, career development programs, programs for students with disabilities, and many others (see Smith et al., in press, for a review of current Canadian programming).

Fundamentally, each program is trying to make the student more comfortable, more acclimated, and more successful. The goal of these programs is to enhance academic skills, engage students and make them feel included in the school's culture, and increase commitment to educational goals – they aim to make the student feel like they belong at the institution.

## Does EDIA exist for Faculty?

*Current State of EDIA in Academia*

In both the US and Canada, faculty from diverse backgrounds remain under-represented in academia, both in terms of percentages in the population, and in the workforce (e.g., CAUT, 2018; Ellsworth et al., 2022). Perhaps this is not surprising given the data we highlighted above that students are not graduating from high school or attending university at the rates that would be expected given their proportion of the population. This inequity persists throughout graduate work and likely results in even fewer racialized, gender and sexually diverse, and disabled individuals achieving the credentials required to become academics. Even though 95% of research-intensive institutions in the US have a senior administrative position dedicated to diversity and inclusion, only 8% of institutions have at least equitable student representation and graduation rates, and 88% of not-for-profit colleges and universities have full time faculty that are less diverse than the US population (Ellsworth et al., 2022).

Yet, in Canada, there have been some important gains over the years (CAUT, 2018). The percentage of racialized faculty rose from 17% in 2006 to 21% in 2016, keeping pace with the percentage of racialized individuals in the population. There are more women faculty than ever before, but women, and especially racialized women, are least likely to have full-time employment positions in academia. Indigenous faculty are also underrepresented, at less than half the rate than would be expected by the number of Indigenous people in the labour force, and less than a third the rate that would be expected by population. Finally, there are clear and consistent wage gaps between non-indigenous non-racialized men and all other groups, with racialized women being the lowest paid. Further, the pace of change is slow. Ellsworth et al., 2022 report that at the current pace of change it would take 300-400 years for faculty diversity to reach parity with the US population.

*Does Merit Really Exist in Academia?*

As noted above, there are systematic issues that need to be dealt with for more diverse representation in faculty. Academia, and jobs in academia, have long been argued to be based on merit. Our peer-review system ensures that the people who are better at being academics (better researchers, better professors, better administrators) get the academic jobs, get tenure, get promoted, etc. But as with any general statement of value such as this, there are caveats. We don't have to look far before we see some of the flaws in the system. The structure of merit within academia was developed at a time when (often White) male professors were the status quo, so perhaps it is no surprise that academic structures tend to work better for men (Van den Brink & Benschop, 2012). Indeed, there has been evidence that women are seen as less qualified than men to be faculty members (Bourabain, 2021; Johansson & Śliwa, 2013) which can lead to discrimination, higher standards for women, lower salaries, and slower progression though the ranks. Despite evidence to the contrary, women are considered slower to achieve their academic success (Krefting, 2003; Staub & Rafnsdóttir, 2020; Van den Brink &

Benschop, 2012), which has been attributed to their family situations (i.e., having children). As such women are more likely to be asked about their family at hiring and promotion (Bourabain, 2021; Mixon & Treviño, 2005; Orbogu & Bisiriyu, 2012; Rivera, 2017; Treviño et al., 2018). Not surprisingly, these perceptions of less "value" from women academics has contributed to the well-established pay gap in academia (Bailey et al., 2016; Schulz & Tanguay, 2006; Woodhams et al., 2022).

For minorities, and women of colour in particular, realities are even worse, as they experience minimization of their skills and qualifications are questions as they are perceived to be "diversity hires" rather than "qualified" applicants (Griffin et al., 2013; Johansson & Śliwa, 2013; Maseti, 2018: Zambrana et al., 2017). Some minority faculty members have indicated that they are consistently fighting to be seen as an academic and not just as their skin colour (Johansson & Śliwa, 2013). These faculty felt that because of who they were they were held to an unfair standard (Griffin et al., 2013) of behaviour while also feeling like they need to offset stereotypes of being "angry" or "aggressive" by smiling and being mindful of their body language (Jackson, 2008).

Another issue that affects "diverse" academics is their workload related to administrative duties. Many faculty members coming from minority groups feel pressure to mentor and support the "next generation" of students who may be looking up to them as a role model (e.g., Griffin et al., 2013). Most universities and colleges in North America are also launching working groups, special projects, policy teams, etc., which specifically require membership from people representing diverse groups. As such this can add significantly to the workload of people who belong to those groups. Added to the disparagement of many academics' experiences toward their work on diversity issues (e.g., Simpson, 2010; being told this "Niche" research is not "rigorous" enough and will therefore not help them achieve promotion and tenure) this can lead to burnout and lack of progress.

### How to support diverse faculty

Employees that belong to one of more categories of having a disability, being racialized, or a sexual or gender minority have greater sense of belonging and job satisfaction in diverse and inclusive environments; But how do we create such an environment for new employees? One strategy that has been used by many academic employers in recent years is the idea of "cluster hires" (e.g., Chilton, 2020; Flaherty, 2015) though not without controversy (Sa, 2019). The basic idea is that a department (or group of departments) decide that they need to hire a diverse group of faculty in one particular area of research. The criticism of this approach (e.g., Sa, 2019) is that this forces departments to group hires into similar research areas within a small number of departments (unless institutional finances are very strong) and this could functionally act to isolate those hires into niche fields. It is certainly the case that groups of faculty hired at the same time will increase a sense of belonginess and comradery among those faculty, but it is important that cluster hires be across disciplines and across institutions to maximize benefits. In addition, continuing the approach over time as part of an institutional strategy will reduce the chances of people feeling that the hires were "tokens" (Chilton, 2020). Importantly, cluster hires should include ongoing support in terms of mentoring programs, support for faculty as they work toward tenure and promotion.

It is worth noting that even with cluster hiring, which can be effective, there must be an awareness of what is meant by "diverse" applicants. As we have highlighted above, often diversity strategies focus on "visible" diversity. Although this is clearly important, we must also be sure to create opportunities for less visibly diverse

people to join the faculty ranks, including those with invisible disabilities, sexual minorities, and people with different personalities, values, and attitudes (e.g., Tabvuma et al., 2023).

## Gaps in the Literature

There have been several identified gaps within the literature as it relates to EDIA that need to be further researched. As stated previously, focusing on diversity alone within this space is not going to lead to increased retention of diverse individuals. Further investigation is needed related to the practice, resources, and overall climate within PSE, as well as how faculty approach their curriculum and pedagogy. For example, experiential learning has shown to be effective in helping students develop new skills, enhance their problem-solving abilities, and gain a more in-depth understanding of lived experiences; meaning that if we diversify and create a more inclusive classroom, all students benefit within this space (Fede et al., 2018; Winsett et al., 2016). Many studies, and our own research, have found that co-curricular approaches to learning improve intellectual engagement, self-efficacy, satisfaction, and feelings of support from the institution (Kilpatrick & Wilburn, 2010; Lourens, 2014; Pasque & Murphy, 2005; Stirling & Kerr, 2015; Tabvuma et al., 2023), while simultaneously providing an inclusive space that mitigates the impacts of educational barriers (Carter-Rogers et al., 2022b). This may be because co-curricular learning helps students better understand people from different backgrounds and helps to develop relationships with their peers who are different from them (Keen & Hall, 2009). This point is key to understanding strong sense of belonging within the institution and needs to be explored further.

Yet most if not all research within this space has considered a singular axis of diversity, and has not approached the advancement of inclusion, belongingness, or diversity within higher education from an intersectional perspective. Research needs to consider how to identify the barriers related to retention and success among students who are from underrepresented populations, especially from an intersectional perspective. There is also a divide related to the implementation of policies and practices within institutions. There is little to no discussion related to the first voice experience about implementing these practices, and whether they are effective or not. Also, it should be noted that it is not the responsibility of diverse faculty or student body to implement these practices. There is need for an investigation into the impacts of tokenism and cosmetic diversity initiatives within higher education which cannot be the sole responsibility of diverse academics (which, as noted above, can lead to excessive administrative workloads). For example, one of the authors of this chapter is an Indigenous scholar, who encourages non-Indigenous colleagues to do the work needed to be active and ongoing allies, as it can be exhausting for Indigenous scholars to bear the emotional labour of convincing fellow colleagues to do the right thing and educate themselves on the ongoing and persistent discrimination of Indigenous peoples within higher education. This would be the same burden put on neurodiverse faculty continuously having to advocate for accommodations for students or other faculty, or the only Black scholar within the department being put on all committees simply because they are Black. Furthermore, to facilitate this "all on board" approach there must be a willingness to accept that non-diverse faculty may be doing good work on these issues, and have meaningful and valuable information to contribute, even when they belong to the majority.

This leads to the final point of recruitment, retention, and advancement of underrepresented faculty members. In this chapter we touched on supporting diverse faculty, and the discussion around meritocratic practices within higher education, but there is a significant gap within the literature as it relates to removing the barriers

that these faculty members experience. Academics are beginning to discuss the decolonization of education (see Russ Walsh and David Danto's chapter in this volume), but there is a discourse that is emerging related to *Cosmetic Indigenization* (Bastien et al., 2023), and tokenized scholars (Price et al., 2024). Black scholars have discussed having to identity shift to feel like they belong, causing severe health implications (Dickens & Chavez, 2018; Dickens et al., 2019; Hall et al., 2012), and it is about time that this discussion is not just happening within the diverse academic circles. The whole academic community needs to start looking inward to how they themselves can begin implementing change within their institution.

## The Future of EDIA in Higher Education

The future of EDIA in higher education is very likely to be driven by the ongoing efforts to addressing the systemic inequalities, promote diversity and inclusion, and enhance accessibility for all. Currently it makes sense that data-driven decision-making will help institutions understand the needs of diverse student and faculty populations to ensure that resources are allocated in a more efficient and effective manner. Further, by actively collaborating with diverse communities, institutions will better understand their needs and goals, which in turn helps to develop a more effective strategy for engaging and promoting EDIA.

To advance initiatives and to make change, there will need to be a commitment from senior academic leadership who must demonstrate their commitment to EDIA and ensure institutional core values are grounded in inclusive practices (Shore et al., 2018). This would mean that strategic planning would have measurable goals that are advancing EDIA, including the perceived belongingness that these individuals experience. Student success programs and funding supports are crucial for advancement of EDIA within institutions, as well as providing for the infrastructure needed for hybrid education, meetings, and health supports. Continuous evaluation of practices and constant improvements are also needed, meaning institutions need to assess effectiveness of EDIA initiatives and adapt as needed. There also needs to be engagement with community and active listening to people's perspectives which can support informed decision making. By implementing strategies like these, institutions can create a more inclusive and accessible space within the institutional environment, ensuring that they are supporting the success and well-being of all the institutional members.

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# Ways of Knowing and Higher Education

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## Introduction

Long before beginning post-secondary education, all of us have experienced different ways of knowing. In our primary and secondary schooling we have moved between lectures and homework in math, sciences, social studies, literature, art and music – often within the same day – readily shifting from one way of thinking to another. In our social relationships we have also pursued different ways of knowing, addressing problems, projects and collaborative play that require understanding and engaging with multiple others in multiple ways. And to the extent that we've participated in religious or spiritual practices and communities, we have experienced knowing in yet other ways. We have in other words been fluidly engaged with multiple ways of knowing. Is this diversity evident in the academic world?

While our personal lives may still require a facility with multiple ways of knowing, our academic lives may corral us into discipline-specific discourses and ways of knowing. This results partly from the specialization that higher education facilitates – pursuing one field of study necessarily leaves others behind. And each field of study has its own history and set of viewpoints, such that to advance in one field is to acquire a particular way of thinking and talking. Higher education may also foster a discipline-specific identity. For example, a student studying computer science is called a computer science major, and it's not all uncommon for that to become the first topic of conversation amidst undergraduate students ("what's your major?") as well as for graduate students and faculty. Hence, in studying sociology, one becomes a sociologist – a position with which one identifies, and through which one views their world. This indoctrination shapes one's position with respect to knowledge.

We've used the word indoctrination because its history calls to mind two distinct aspects of post-secondary learning. To indoctrinate is to teach, and indoctrination is learning – at least those were the original meanings of the terms. An indoctrinated individual was a scholar with a depth and breadth of knowledge, typically across multiple disciplines. However, over time these words took on a negative connotation, with indoctrination

taken to imply accepting a set of beliefs uncritically – a contraction rather than expansion of thought, with an indoctrinated individual seen as close-minded rather than receptive to alternative viewpoints (Lewin, 2022).

We'd suggest that today's higher education holds both potentials. While we hope that our teaching opens students' minds to new ways of thinking and understanding, lectures and exams often require students to memorize names, dates, and terms – facts deemed essential to a given topic or field. This form of knowing, while arguably building a foundation for more advanced learning within a discipline, may inhibit a broad or integrative mindset that can understand – or at least seek to understand – a phenomenon from multiple perspectives (Lawson, 2001). And while academic research and scholarship ideally reflect a sensitivity to the complexity of knowledge, publishing often calls for a determined focus on a singular dimension or set of dimensions within a much broader field. Moreover, the demands of teaching and research often restrict opportunities for broader thinking outside of one's area of expertise.

We run the risk here of painting with broad strokes and neglecting the nuanced ways in which many educators value and facilitate critical thinking. However, we wish to underscore the potential within higher education to maintain separate clusters of exclusive knowledge domains that, like occupants of the Tower of Babel, inhabit a shared space but cannot engage in conversation. A further risk is that this tower of separate discourses is also cut off from ways of knowing outside of traditional academic frameworks.

How can we facilitate greater openness and breadth? We think the answer calls for more thoughtful consideration of *ways of knowing*, and more explicit respect for – and integration of – this diversity throughout all levels of higher education systems. Diversity has become a necessary and appropriate touchstone in higher education, as well as in society more broadly, as we seek to create a more just and equitable world (Guo & Jamal, 2007; Smith, 2020). One aspect of this turn particular to education has been an emphasis on the pedagogical value of diversity, highlighting the important role played by a diverse student body in facilitating awareness of and appreciation for the differing experiences and perspectives of others. At least implicitly, this acknowledges that there are multiple ways of knowing worth knowing.

To consider ways of knowing is to pose questions of epistemology (what counts as knowledge) and ontology (what count as valid objects of study), two philosophical terms that many academic fields – aside from philosophy– tend to avoid. While perhaps having addressed these to some degree in a required undergraduate philosophy course, many scholars rarely consider the relevance of these questions to the limits of their approach and prospect of interdisciplinary dialogue. And yet it seems to us that reflection on the horizons of one's academic discipline as well as the prospect for communication across disciplines is possible only to the extent that epistemology and ontology are made explicit. Even within disciplines, debates that often focus on research methods and results are often situated in contrary assumptions regarding what counts as valid knowledge and what are deemed essential objects or qualities worthy of study.

The terms *approach* and *horizon* used above are drawn from two scholars – one a psychologist and one a philosopher – who explicitly addressed epistemology and ontology. Amedeo Giorgi (1970), arguably the founder of qualitative research in Western psychology, discussed the importance of recognizing one's position with respect to the topic studied:

By establishing the category of approach we mean to take into account the researcher himself in the

enterprise of science. By approach is meant the fundamental viewpoint toward man and the world that the scientist brings, or adopts, with respect to his work as a scientist, whether his viewpoint is made explicit or remains implicit" (1970, p. 126).

The above quote is noteworthy not only for its explication of the term approach, but also for the implicit features of the definition itself – what we can now see as an exclusionary language (man; himself) that at the time of Giorgi's writing was simply the dominant, taken for granted format within which academic scholarship was presented. Hence Giorgi both defines and demonstrates the indelible role of one's approach in both how one sees and how one communicates in academic discourse. While today we are presumably more sensitive to the risks of imposing gender in scholarly writing, we'd suggest that there are nonetheless other implicit features imbedded in the standard practices of any discipline (Bazerman, 1988).

Each discipline has its own vantage point, delimiting knowledge claims and methods. Martin Heidegger (who himself had a vantage point that has been critically scrutinized) used the term horizon (Horizont) to describe the language- and experience-based framework or boundary (Grenze) that both allows for and constrains one's perspective (1927/1962). Using the metaphor of a forest, Heidegger spoke of the clearing (Lichtung) that is one's area of focus – as with the saying that one "can't see the forest for the trees", an individual's clearing opens up a space for understanding, but in doing so necessarily excludes other clearings, or approaches. This was presented not as a flaw to be corrected, but as an unavoidable feature of human knowledge. Indeed, Heidegger's student Hans-Georg Gadamer (1960/2013) carried these ideas further, arguing that one's historically and linguistically situated prejudice (Vorurteil) is the lens through which understanding is made possible. Hence one's ability to understand another's perspective requires recognizing the limits of one's own perspective.

Communication within and between disciplines, if it is to be productive, must arise out of a respect for the wide range of epistemologies and ontologies from which any scholarly work proceeds. In our field of psychology, for example, longstanding tensions (if not outright hostilities) between quantitative and qualitative researchers reflect differences in what are considered valid data, the criteria for evaluating conclusions, and the fundamental elements of human nature. Indeed, these differences trail back to debates at the very start of the discipline, when Wilhelm Dilthey (1927/1977) mapped out two distinct paths: the natural sciences and the human sciences, each with different assumptions and desired outcomes. Beyond the field of psychology, these two paths track loosely with the academic divide between the liberal arts and the sciences (with the social sciences often straddling that divide). Whether or not the liberal arts and sciences are situated within a shared school (as in colleges of arts and sciences) or separately, the ways of knowing favored by each clearly reflect differing epistemologies and ontologies.

While interdisciplinarity is advocated at many institutions, in our experience it is rare to see initiatives that integrate across the arts and sciences. On the contrary, it seems far more common for curricular revisions within programs to exclude courses from the other side of this divide. This may result in part from increasing demands for more content and academic credits within departments or programs. But it is also likely a reflection of a lack of appreciation for the divergent approaches to knowledge outside of designated programs.

Any discussion of epistemology and ontology must include the concept of *intersectionality* (Crenshaw, 1989; Carastathis, 2016), meaning that our ways of knowing may have multiple sources that include a complex interplay of cultural values, historicity, and geographical locations – and oppression. Hence, thoughtful

consideration of ways of knowing calls attention to the potential multitude of meanings within individuals as well as across them, as well as the oppressive potential of dominant discourses. As we noted at the start of this chapter, our lived experiences are comprised of overlapping and interwoven webs of meaning through which we engage with the world around us. Intersectionality underscores the ways in which, for many, these meanings may be minimized or silenced by taken for granted and dominant ways of knowing. Keeping this in mind can perhaps enhance our openness to the diverse, complex, and multilayered perspectives of others, particularly those whose perspectives fall outside of traditional academic mindsets.

## Other Ways of Knowing

If higher education is to truly embrace divergent ways of knowing, it must pay particular attention to vantages beyond those of traditional academic epistemologies. While the concept of intersectionality invites this consideration, the oppressive impact of privileged ways of knowing warrants further discussion.

As a critical example, in Canada and the United States, over the last decade the topics of reconciliation and indigenization have been receiving increased attention. The report of the Truth and Reconciliation Commission of Canada, published in 2015, called attention to Canada's longstanding wrongdoing toward Indigenous Peoples – both historically and in ways that are ongoing. Residential School Survivors experienced the intentional application of processes that undermined Indigenous cultural identity and with this, Indigenous language, values, and of course, ways of knowing. These processes followed from a perspective of presumed Eurocentric elitism over the First Peoples residing in the territories now known as North America – a perspective that shaped the forms of knowledge evident across academic disciplines.

To demonstrate the impact of privileged ways of knowing within academic disciplines, we will focus on our field of psychology. As is true of other fields as well, the dominant epistemologies of psychology, as it is understood today, reflect the cultural assumptions and values of the era in which this field arose. As a result, Indigenous ways of knowing have been all but silenced in the psychology literature historically, and current approaches to scholarship and practice relating to Indigenous Peoples are likely to marginalize or harm members of the Indigenous community. This fact presents a significant problem for a field that prides itself on stringent and well-articulated ethical codes and standards.

As an example, imagine yourself as a clinical psychology student in Canada during the 1970's. In all likelihood, outside of a history class in high school you would not have learned about Indigenous Peoples, and what you did learn would have suggested that through the mutually beneficial signing of treaties, Indigenous Peoples came to share their land with Western Explorers, who 'discovered' this place. You would have never heard of a territorial acknowledgement, the Residential School System, or the 60's scoop. You would probably have been unaware that Indigenous People in Canada had been mistreated in any way.

As you entered university, you developed an interest in psychology, rather than history, anthropology, or political science. Likely therefore, you would not have had any further formal education about Indigenous People or legislation relating to First Peoples. The topic may have come up in graduate school in the context of working with Indigenous communities, but you would have been taught that the clinical treatment and assessment approaches to which you were exposed were largely applicable to all peoples. Had you done some

digging, you would have found very few if any Indigenous participants were included in the samples that went into developing these methods and approaches.

If, after obtaining your professional degree, you found yourself travelling to a northern community to administer psychological assessments to determine an Indigenous person's ability to parent a child, the methods you'd apply would presume Western styles of parenting and Western values. From this perspective, Indigenous understandings of family and well-being might be deemed deficient or pathological.

When you deliver psychological tests, they are developed to identify Western diagnoses, based on Western theories of mental illness and Western views of behaviour, problem solving, family dynamics etc. Therefore, what you find as a new mental health professional, is a disproportionate number of Indigenous patients, needing to be separated from family, administered more invasive treatments, etc. And cultural context – the fact that your patient has limited access to clean drinking water, has poor secondary school options at best, has no comprehensive hospital in commuting distance, and forever feels the weight of being governed by an occupying population that views them as inferior– are all details that are extraneous to your assessment, because they fall outside of the sphere of psychology. If you expand this singular example across the field of psychology to include almost every interaction between Indigenous people and the profession over the last 60 years or so, you may begin to comprehend the scale of this problem.

In its 2018 response to the findings of the Truth and Reconciliation Commission of Canada, the Canadian Psychological Association published a treatise with objectives that sought to produce "recommendations and guiding principles that acknowledge and respect Indigenous concepts of the person, health, family, and ways of knowing". In 2023, the American Psychological Association followed suit, publishing a report that offered an apology to First Peoples in the United States, and acknowledging that "APA should elevate psychology's understanding of and regard for Indigenous epistemologies and ontologies and research centered on Native persons, peoples, and communities."

Indigenous epistemologies in and of themselves are complex and varied, and it is beyond the scope of this chapter to review in detail Indigenous epistemologies and other culturally grounded ways of knowing and their intersectionality. Nevertheless, again using our own discipline as an exemplar, the report from the Canadian Psychological Association outlines several general guiding principles – *cultural allyship, humility, collaboration, critical reflection, respect, and social justice* – that can serve as valuable touchstones in approaching divergent epistemologies or ways of knowing.

## Cultural Allyship

One of the ways we can avoid the oppressive imposition of privileged ways of knowing is through developing a sense of *cultural allyship*. This principle guides us to learn about others and be concerned for their wellbeing as a cultural group. This is distinct from a more 'objective' stance of learning about a people in a reified or 'thingified' way. Allyship is about caring enough to try to develop some cultural competence so that you can increase your understanding of the cultural world of the people that you are working with and in so doing develop your sense of empathy with their perspective.

*Humility*

The second guiding principle is *humility*. Across many academic disciplines, Western epistemologies can be viewed as the ultimate authority on what counts as valid knowledge. However, across Indigenous communities Elders, Kohkums, and Knowledge Keepers may have an immense wealth of knowledge and wisdom, despite never having attended a single university class. Their kind of knowledge is different, and may be more useful, applicable, and broader in scope that what our academic training brings to bear on a situation. Therefore, we should approach other ways of knowing with modesty and curiosity.

*Collaboration*

The principle of *collaboration* is exemplified by the colloquial saying, 'Not about us without us' – in other words, that in trying to understand a person or people, we should include them, not only as participants from whom we extract data, but as true participants throughout the processes of posing questions, seeking tentative answers, and applying those answers in real world settings. In this way we work toward ensuring that what we are seeing is not a product of our own siloed ways of knowing and is relevant to the contexts and communities with which we are engaged. In our example from Psychology, established methods of assessment and clinical interventions were developed abstract from the diversity of people and experiences to which these forms of knowledge would be applied. As a discipline with a growing sensitivity to the significance of ways of knowing, this can no longer be acceptable practice. More broadly, efforts to recognize and address the challenges faced by Indigenous peoples should include them at every step.

*Critical Reflection*

The third guiding principle, *critical reflection* means that we look back at our training, our approaches and our practices and ask how our ways of knowing limit what can be seen. This takes real effort. The saying, 'The fish is the last to discover water' captures this idea, as does the recognition that for decade after decade well intentioned members of the population had a difficult time seeing the mistreatment of Indigenous Peoples in Canada. Critical reflection entails applying critical thinking to our own taken for granted assumptions and practices, allowing the potential friction between our ways of knowing and those of others to reveal more clearly the lenses through which we have viewed the world.

*Respect*

The principle of *respect* can assist us in attending to Indigenous ways of knowing in a few ways. First, like the principle of humility, respect reminds us that we should be attuned to the wealth of knowledge possessed by members of Indigenous communities, and the wisdom it provides. Second, we should be respectful of the experiences and hardships faced by First Peoples in Canada and around the world. These people have too frequently been subjected to genocide, forced conversion, impoverished conditions, and diminished health indicators, all at the hands of the dominant population, its policies, and laws. When we meet with others who have been impacted in this way, we should be mindful of those impacts. We should also affirm that, despite facing innumerable atrocities over centuries, Indigenous Peoples have nevertheless persisted and demonstrated resilience through adherence to culture, traditional knowledge, and language.

*Social Justice*

The principle of *social justice*, like allyship, calls attention to our Western academic value of 'objectivity'. Some have referred to Psychology as being 'scientistic' rather than scientific because historically it has attempted to emulate the hard sciences. Although the scientific method may be often appropriate to address prejudices and problems in human perception when conducting rigorous inquiry, we should not shy away from advocating for others when we see that they are being treated in ways that are unjust. Historically, we have precisely done this, which is why in our example, it is unlikely that our young practitioner would have spoken up. To do so, would be to risk being called an 'activist' by peers and that would have been an implicit slight against the professional's objectivity or merit as a scholar and as a scientist.

## Implications for Higher Education

What we have highlighted here regarding the diverse ways of knowing among our Indigenous neighbors is relevant to many forms of diversity that our students express in and outside of the classroom – as well as the diversity between and among academic colleagues and disciplines. Recognizing and affirming this diversity can be informed by the general guidelines proposed by the Canadian Psychological Association's response to the findings of the Truth and Reconciliation Commission of Canada.

*Cultural allyship* in an academic context applies to the unique experiences and practical wisdom of our students. While there is much that students do not know, they bring a diversity of life experiences and acquired knowledge that can inform and even challenge the canons of established disciplines. In our experience, openness to what students bring to the classroom enriches the learning experiences of teachers and students alike. Cultural allyship affirms this openness and adds a particular sensitivity to those students from historically and currently oppressed communities, whose voices can even now be minimized or silenced by dominant cultures and discourses. Hence, listening for, inviting, and affirming these perspectives is especially important for contemporary teaching and learning.

*Humility* in higher education can entail recognizing the limits of our knowledge, both individually and collectively, as well as striving to complement our bodies of knowledge with the wisdom of other forms of knowing. This follows from the principles of *respect* and *collaboration*, the latter being contingent on the former. As noted earlier, while interdisciplinarity is currently advocated in many university settings, in our experience this rarely crosses broad disciplinary boundaries such as liberal arts, sciences, and business. This fosters a dismissiveness of ways of knowing outside of established systems, which can be exacerbated in a climate of competition for recognition and resources. Broad interdisciplinary respect and collaboration must be encouraged, supported, and celebrated throughout higher levels of university administration if is to be demonstrated in practice as well as principle. This would require targeted initiatives that encourage crossing academic divides that would otherwise remain barriers to engagement and mutual respect.

*Critical reflection* in higher education, a corollary or concomitant of humility, requires looking at the ways in which our own disciplines – as well as higher education in general – have fostered or perpetuated exclusionary and oppressive practices. To the extent that these practices have marginalized particular cultures and peoples, this reflection is necessary if *social justice* is to be attained. While social justice initiatives are being undertaken

and affirmed across many academic disciplines, facilitating critical reflection in the classroom poses challenges. Discussion of historical and current oppression can be difficult, as inviting students' reactions and perspectives on these runs the risk of cultivating a classroom climate that is experienced by some as uncomfortable or offensive. However, avoiding these risks also avoids the kinds of critical reflection that demonstrates how recognizing and affirming diverse ways of knowing – despite their challenges – are essential, ethical aspects of learning.

## Conclusion

We hope that this chapter has underscored the importance of appreciating ways of knowing and their relevance for higher education. Epistemology and ontology – foundational assumptions of what counts as valid ways and sources of knowledge – shape how each of us views the world, as well as how we introduce those views to students. As centers for intellectual growth and development, academic institutions are uniquely poised to affirm and cultivate diverse ways of knowing and the value of interdisciplinary respect and collaboration. We have tried to outline extant obstacles and challenges to this in practice, as well as potential pathways forward.

Our discussion necessarily addressed Indigenous ways of knowing and their neglect throughout higher education and beyond. Drawing upon the response of Canadian Psychological Association to the Truth and Reconciliation Commission of Canada, we described the guiding principles of cultural allyship, humility, collaboration, critical reflection, respect, and social justice, and their implications for the treatment of Indigenous communities throughout Canada and the United States. These principles were then applied to contexts in higher education, with the suggestion that the CPA guidelines can inform academic practices to affirm and facilitate diverse ways of knowing in teaching, collaborative research, and education administration.

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# Indigenization and the Future of Post-Secondary Education

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## What is Indigenization of post-secondary education?

*Indigenization, decolonization , and reconciliation (IDR)*

**Indigenization, decolonization , and reconciliation (IDR)** are three terms used to describe actions taken to address the challenges faced by Indigenous people in post-secondary education. A commitment to IDR across all levels of the post-secondary education system provides educators and decision-makers with opportunities to actively engage in transformational change. Post-secondary institutions have a responsibility to support educators and decision-makers in examining the historical and current models of education and applying innovative practices to champion Indigenous pedagogy.

When envisioning the future of post-secondary education for Indigenous learners, understanding past practices is fundamental for influencing future approaches. Indigenous-informed education practices will lead the way and change the experience for First Nation, Inuit, and Métis learners. Simultaneously, non-Indigenous learners and educators will benefit from recognizing the value of Métis, First Nation, and Inuit ways of knowing and doing.

Examining how institutions define IDR will support educators in identifying who will lead the change and in locating partners and allies. Educators committed to effecting change will consider personal context and location and actively collaborate with Elders and Knowledge Holders. The words shared by Bob Joseph (2018), guide and enrich our understanding of education practice and IDR.

- Indigenization "*...is about incorporating Indigenous worldviews, knowledge and perspectives into the education system, right from primary grades to universities*" (Joseph, 2020, Para. 6).

- Decolonization *"...requires non-Indigenous Canadians to recognize and accept the reality of Canada's colonial history, accept how that history paralyzed Indigenous Peoples, and how it continues to subjugate Indigenous Peoples."* (Joseph, 2020, Para. 2).

- Reconciliation *"... is about establishing and maintaining a mutually respectful relationship between Indigenous and non-Indigenous peoples in this country."* (Joseph, 2018, Para. 5).

At the heart of these definitions is the understanding of the pivotal role relationships play in creating place and space for Indigenous learning. The work will take time, is complex, and is not the exclusive responsibility of Inuit, Métis, and First Nations. Together, we will embark on a transformative journey into the future of post-secondary education – one where Indigenous knowledge threads its way through the fabric of higher learning, fostering innovation, cultural diversity, and a reimagined academic landscape. This chapter aims to support those interested in understanding why we should engage in IDR, how to infuse IDR into teaching practices, and what educators can do to positively impact lived experience of Indigenous people.

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**Pause for Thought**

1. **Where has my knowledge of First Nation, Inuit, and Métis come from? What biases may exist in the knowledge I have acquired?**
   Reflect on when you first recall learning about Indigenous people. Who were the people tasked with sharing this knowledge? What was their social position? Consider the implications of the unintended bias shared by the experience.

2. **How can we keep our ongoing work around Indigenization and decolonization authentic and from the heart, as opposed to a checklist of things to do?**
   Ponder the deeper motivations behind your efforts. Authentic engagement involves more than ticking boxes; it requires a commitment to understanding, respect, and genuine collaboration with Indigenous communities. Reflect on how you can approach this work with sincerity and empathy.

3. **How do you see reconciliation applying to your own life?**
   Consider how reconciliation extends beyond the classroom. Reflect on your personal connections to Indigenous histories, cultures, and experiences.

4. **Why should I Indigenize and decolonize teaching & learning?**
   Delve into the reasons behind Indigenization and decolonization. Recognize that it is an invitation to honor Indigenous perspectives, contributions, and knowledge. Reflect on how

> Indigenization promotes equity, enhances learning experiences, supports reconciliation, and aligns with holistic approaches to learning.

## Why You Should Engage in IDR – Imperatives for Change

The higher education learning community, as it currently stands, must participate in thoughtful self-reflection to enhance support for Inuit, Métis, and First Nation learners. Recognizing the need for change can often be difficult for those who have not experienced the realities faced by Indigenous communities. The Western traditional model of education often employs a one-size-fits-all approach to learning that has appeared to work. However, this belief stems from the dominant culture creating a system built for the needs of their community. Increasing an understanding of the experience faced by First Nation, Inuit, and Métis learners will improve outcomes and transform the learning story. To enhance the education system, educators must embrace practices that meet the learning needs of Métis, First Nation, and Inuit learners.

In 2009, the Saskatchewan Ministry of Education created a document to support Indigenous education. *Inspiring Success: Building Towards Student Achievement* provided K-12 educators with compelling reasons to transform their teaching practices. The four imperatives outlined in this document reinforced educators' understanding of the need for change. Importantly, these imperatives have the potential to positively impact not only K-12 education but also post-secondary institutions.

The imperatives – moral, economic, and demographic – serve as guiding principles for decision-making in K-12 education with the intent of improving completion rates and overall success for Indigenous learners. In 2018, the Ministry of Education engaged in further consultation with organizations, Elders, and Traditional Knowledge Holders from across the province. The result was a renewed document titled; *[Inspiring Success: First Nations and Métis PreK – 12 Education Policy Framework](#)*. The imperatives remain present in the new document, with additional imperatives becoming part of the strategy after consultation with the community.

Examination of the imperatives provide educators with a reason they should engage in IDR and a foundation on which to build Indigenous pedagogy into their current practices.

### A. The Cultural Imperative

The impact of the Residential School system on Inuit, Métis, and First Nation learners has been significant. Recognition of this harm has become more prominent since December 2015 with release of the *[Final Report of the Truth and Reconciliation Commission (TRC) of Canada](#)* and the *[94 Calls to Action](#)*. A positive first step in the healing process is recognizing the impact of learning alongside First Nation, Inuit, and Métis. Realizing a commitment to healing this reality begins with an examination of the cultural imperative. The cultural imperative affirms Indigenous identity and knowledge transfer from both historical and contemporary pedagogy.

"Through their learning experiences, Indigenous learners need to see and hear that they, and their families, communities, histories, and cultures are valued and important." (Chrona, 2022, p. 24).

The gift of knowledge shared by Elders and Knowledge Holders reduces the emotional impact on learners of Métis, First Nation, and Inuit ancestry. Learning supported with Indigenous culture will also open the door for the inclusion of Inuit, Métis, and First Nation ways of knowing and doing. All students will benefit from the affirmation of Indigenous cultural knowledge and begin to reduce barriers and stigma, the result of colonization. We will also begin to recognize that Indigenous ways of knowing and doing are contemporary, not restricted to historical understandings.

## B. The Ecological Imperative

In 2015, recognition of the land and acknowledgement of the original inhabitants became part of the public response to the TRC's Final Report. Indigenous learning relies on the essential connection to the land and the gifts it offers. The land shares a story that builds knowledge in a variety of ways. Educators can model this learning and use the land to support experiential learning and engagement of learning. An increased connection to the land by learners will benefit the land itself. These connections can work to address the continuing impact of climate change, water crises on First Nations, and loss of habitat. The ecological imperative underscores the value of embedding First Nation, Inuit, and Métis knowledge and action in instruction, assessment, and curriculum.

## C. The Moral Imperative

The education reality experienced by Métis, First Nation, and Inuit learners is not a manifestation of recent practice. In Saskatchewan, the 2021 high school completion rates for Indigenous students who finished school within three years of entering grade 10 was 45 per cent, the five-year completion rate was 62 per cent (Simes, 2023). While this represents progress compared to previous years, the numbers are static. In contrast, non-Indigenous students achieved significantly higher graduation rates during the same period. Eighty-nine percent for the three-year rate and 92 percent for the five-year rate. The intent here is not to compare one group to another, rather to highlight the experience for both.

The moral imperative should drive decision making for determining the responsibility of educators and institutions implementing change. When confronted with the reality of Inuit, Métis, and First Nation learners a reaction is often *'Indigenous learners must learn to fit into the world of higher education,'* this narrative must change. Educational institutions bear the responsibility to respond to the inequity that it has perpetuated, creating a more inclusive future.

## D. The Economic Imperative

In 2013, The Gabriel Dumont Institute, with Eric Howe of the Howe Institute, authored a report outlining the economic impact of bridging the education gap. The goal of the document was to provide an understanding of the overall benefit for First Nation, Inuit, and Métis learners graduating high school and pursuing post-secondary education. Howe gathered data based on program completion (degree or diploma), Indigeneity (First

Nation and Métis), and gender. Howe (2013) found that the benefit of completing high school for an Indigenous learner is almost $300 000 more in lifetime earnings (Howe, 2013, p. 6). These lifetime earnings could increase further if learners successfully complete post-secondary education.

Howe (2013) also examined the social impact of education completion for Métis, First Nation, and Inuit learners. He predicted closing the graduation achievement gap would provide a social benefit to the province of Saskatchewan of about ninety billion dollars (Howe, 2013, p. 35). This number would most certainly be higher if learners achieved success at the post-secondary level as well. The economic imperative articulates quality of life criteria for changes to education in support of Inuit, Métis, and First Nation learners.

## E. The Historical Imperative

The Western narrative describes a shared history between Indigenous and non-Indigenous peoples. We must begin to question that narrative given the lived experience of Indigenous people on this land. Western culture has been the predominant voice about the history of the land since contact which highlights how difficult it is to call this history shared. First Nation, Inuit, and Métis must have opportunity to tell their stories and history. Providing access to platforms with Indigenous voice for non-Indigenous historians need to become part of the conversation.

Using the term, 'shared history' minimizes the reality that exists between Indigenous and non-Indigenous relations. The dominant narrative attempts to describe the cohabitation of cultures as living a peaceful coexistence with mutual respect. The reality is a different story. Strained relationships have created historical and contemporary challenges to the coexistence of cultures. A 'shared history' also implies that the story has voice from all parties involved. The history as told, primarily involves non-Indigenous voice speaking for all. Pages of history such as the signing of the Numbered Treaties in the West or the Riel Resistance are different when we hear from First Nation or Métis Elders and Knowledge Holders. Historically, it is necessary that we recognize the dual history experience and provide voice for the Métis, First Nation, and Inuit. It is imperative that Indigenous voice be present when discussing history.

An essential understanding of the work needed to achieve the change centers on relationships with Indigenous communities. To support learning for Inuit, Métis, and First Nation, we need to consult them to find meaningful strategies.

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**Pause for Thought**

1. **Which imperative is most connected to you and your work?**
   Reflect on how each of these imperatives has contributed to the lived reality for Indigenous peoples of this land. How can changing the current reality affirm Indigenous knowledge and reduce barriers to success?

2. **How can higher education advocate for change at all levels of education?**

This work will be successful when everyone involved in education recognizes the importance of systemic change. Reflect on how accomplishing this can be in partnership with Indigenous and non-Indigenous parties.

3. **How does higher education work with community to protect Indigenous knowledge and the people responsible for its integrity?**
Reflect on how the education system has a responsibility to ensure that Indigenous knowledge maintains safety in a complex world. How will higher education affirm the knowledge and work to have holders of the knowledge become regular participants in campus activities?

4. **How will education repair relationships and work toward enhanced inclusion of Indigenous peoples in higher education?**
Reflect on current practice and how enhancement would change the reality for Indigenous and non-Indigenous learners. Explore ways in which Indigenous pedagogy can become part of learning in higher education.
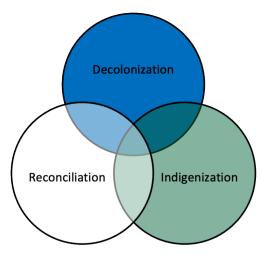
## Indigenization, Decolonization, and Reconciliation – Where do we Begin?

Providing a context for how education has defined IDR will influence future practice. Whether we use the definitions of IDR provided, access local definitions, or engage with Elders and Knowledge Holders to create definitions, understanding these terms will sustain education renewal. To reduce barriers to implementation, we want to identify which group best provides strategic leadership for the components of IDR.

**Indigenization** – non-Indigenous educators may require assistance in finding a place where they are actively involved with Indigenization. Growth of Indigenous voice since the emergence of *Idle No More*, has added a layer of uncertainty to the experience of cultural appropriation. We recognize that First Nation, Inuit, and Métis will provide leadership for Indigenization and invite non-Indigenous friends and allies to walk alongside. The desire is to achieve "*the respectful, meaningful, ethical weaving of First Nations, Métis and Inuit knowledge, lived experiences, worldviews, and stories into teaching, learning, and research*" (Arcand et al., n.d., p. 36).

**Decolonization** – requires leadership from non-Indigenous peoples. Non-Indigenous people created and currently maintain the system, which Métis, First Nation, and Inuit have difficulty influencing. The creators of the "*divisive and demeaning actions, policies, programming, and frameworks*" (Arcand et al., n.d., p. 36) must lead the change. Indigenous voice will collaborate on which changes will provide greatest impact.

**Reconciliation** – will require healing of relationships between Indigenous and non-Indigenous peoples. Leadership from non-Indigenous peoples will be advantageous for successful reconciliation, recognizing the impact of systemic policy on Indigenous people and who is responsible for those policies. Working in tandem with Indigenous community will be most beneficial. One reason for this comes from feedback received from Elders and Knowledge Holders. The absence of a consistent friendly relationship between the two groups is a reason for distrust of the process. Authentic reconciliation will reduce barriers and rebuild lost trust.



Engaging in any one of the three initiatives will begin to change the education landscape and improve relations. The greatest improvement will happen when we are engaged in all three components of the Venn diagram, the cross-section of Indigenization, decolonization, and reconciliation. Determining personal and systemic areas of strength and influence will help identify the starting point. Accomplishing the goal of IDR in education can happen by finding others who will compliment areas where you need additional support. Leading these efforts with *hen la mimwayr* (one mind) and *hen keur* (one heart) will produce meaningful results.

**Pause for Thought**

1. **How will I go about learning the names of the original inhabitants of the land on which I live?**
   Reflect on ways to build relationship with the Indigenous peoples of the land you are on. Are they identified in the original language or is the language thrust upon them? How will you go about learning the original names?

2. **How will I go about finding Indigenous peoples in my subject area?**
   Reflect on ways to foster relationships with scholars in the field. How will I reduce barriers to collaboration?

3. **How will I learn and unlearn the dual history of this land called Canada?**
   Reflect on how the dominant culture has told the history. What will I do to ensure that Indigenous voice is part of learning?

4. **How will I work to build relationships with Indigenous peoples based on kindness, compassion, and understanding?**
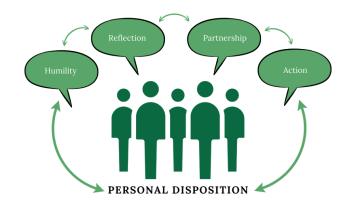   Reflect on steps that I can take to address the hurt and contribute to healing the relationships.

## Reciprocity of Relationship

Understanding the reality experienced by First Nation, Inuit, and Métis individuals and communities is essential for knowing, valuing, and believing in learners. Continued involvement and dedication to improving

teaching and learning aimed at enhancing the Indigenous student experience and improving achievement afforded me the opportunity to be creative. The result of the creativity is a model used to identify encouraging practice in support of learning titled, *Reciprocity of Relationship.* The model describes ways in which an educator can approach learning in partnership with the learners. Imperatives are the foundation for the Reciprocity of Relationship model and influence indicators to guide growth.

### RECIPROCITY OF RELATIONSHIP

Historically, Métis, First Nation and Inuit learners have difficulty seeing themselves in an education system designed to assimilate Indigenous learners. Educators have a responsibility to work in partnership with First Nation, Inuit, and Métis to foster understanding of culture, language, and tradition to support improved outcomes for all learners (Ministry of Learning, 2018). Culturally, the current reality will shift when First Nation, Inuit, and Métis ways of knowing, being and doing stand in tandem with western paradigms. A partnership of learning forged between Métis, First Nation and Inuit and the non-Indigenous community is pivotal in supporting culturally responsive educator practice

The intended outcome of this model is to support all educators in developing a disposition of reciprocity through effective cultural responsiveness to change the current reality. All educators should strive to continually engage in learning that supports Reciprocity of Relationships.

### A. Disposition

**The Disposition Domain** describes the critical, fundamental understanding of an educator's mindset needed for the respectful approach to improving the educator-learner relationship, engagement and, in the end, achievement. There will be observable benefits for Indigenous learners when the dispositional domain position becomes the norm. Additionally, non-Indigenous learners can experience a shift in values, beliefs, and attitudes.

Educators have a responsibility to instruct all students about the history of the Inuit, Métis, and First Nations on this land called Canada. Providing all students with opportunities to gain experience about the historical and contemporary relationships between Canada, First Nations, Inuit, and Métis is an increasingly key component of citizenship education which helps reduce conflict, foster trust, and improve relationships (Ministry of Learning, 2018). Learning about our shared history by growing understanding within learners begins to reduce misconceptions that contribute to racism. Educators will adapt the curriculum, build partnerships, engage in shared decision-making, and ensure students achieve learning outcomes.

Approaching education with a mindset that promotes learning and unlearning about this land's dual history builds comprehension for all students. This knowledge will help reduce misconceptions that contribute to racial

ideals. Working together, we can foster trust and improve relationships, which is an essential component of citizenship education. Humility, reflection, partnership, and action will work together, they will nurture an inherent tendency to see, feel, think, and act in ways that nourish reconciliation. This work will take each member of the education community on a journey that will move education for First Nation, Inuit, and Métis.

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### Personal Disposition Indicators

- Growth mindset
- Foster trust
- Build relationship
- Model social & emotional intelligence
- Professional
- Advocates for Indigenous identity
- Makes space for a multiplicity of Indigenous voice

- Collaborative
- Value cultural diversity
- Positive
- Enthusiasitc
- Communicator
- Promotes an Indigenous purpose
- Understands the risk taken to present one's Indigenous identity to others

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## B. Humility

Indigenization, decolonization, and reconciliation in teaching requires an understanding of the Indigenous diversity present in the classroom, school, and community. A humble approach to education will involve the educator seeking ways to honour learner's prior knowledge, protecting space for learner voice, and valuing participants through flattened hierarchies. The humbled educator accepts personal faults and is aware of personal biases that impact instruction, assessment, and expectations.

A humble educator will position themselves as a learner to think deeply and creatively about their practice. They will seek out opportunity to build authentic relationships with students of Indigenous ancestry. Through these relationships, a humble approach will reduce the hierarchy and provide gifts of learning to all. The humble educator will provide understanding that they can become the learner and the learner can become the educator. This reciprocal learning relationship will elevate Métis, First Nation, and Inuit knowledge to levels equivalent with Western knowledge.

An educator will demonstrate a humble disposition when they provide evidence of unlearning narratives that diminished Inuit, Métis, and First Nation ways of knowing, and doing. This will require a commitment by the educator to decolonize instruction, curriculum, and assessment. Working collaboratively with Indigenous education specialists will be a priority. Creating space that enables First Nation, Inuit, and Métis learners to retain their value systems is one of the goals of the model. An examination of personal beliefs by educators to reflect on the impact of bias on instruction, assessment, and learner expectations will support retention of those value systems.

**Humility Indicators**

- Inner strength
- Open mind
- Aware of personal bias
- Honour student's prior knowledge
- Educator and learner equally contribute to knowledge in course

- Courageous
- Ownership of personal faults
- Honour diversity
- Protect space for student voice
- Educator and learner have a balanced relationship in learning

## C. Reflection

Indigenization, decolonization, and reconciliation in teaching requires educators to reflect on their purpose in the classroom, school, and community in relationship to Métis, First Nation, and Inuit ways of knowing, being and doing. A reflective approach to teaching and learning will involve the educator recognizing unconscious bias and social positioning. The reflective educator consciously seeks to identify how lived experiences have influenced their worldview and recognize this may cause unnecessary difficulty for learners and caregivers. The reflective educator will question personal and systemic biases and assumptions.

The reflective educator will listen to the experiences of Inuit, Métis, and First Nation learners, caregivers and community and a commitment to seeking understanding. Approaching these lived experiences with a strengths-based attitude will counter act deficit thinking. Trust in learning will manifest as the reflective educator considers the impact the learning environment plays in the Indigenous student experience. Supporting physical, emotional, intellectual, and spiritual balance for everyone will create brave, safe learning spaces. As educators practice thoughtful reflection, authentic integration of First Nation, Inuit, and Métis culture, tradition, and knowledge becomes part of their teaching toolkit.

**Reflection Indicators**

- Recognizes unconscious bias
- Question systemic bias
- Recognizes impact of worldview on learners
- Educator examines curriculum, instruction, and assessment for bias

- Questions personal bias
- Recognizes social positioning
- Educator engages in critical thinking and transparency of process
- Educator respects impact of learning environment with awareness of Residential School history and contemporary reality

## D. Partnership

Indigenization, decolonization, and reconciliation in teaching requires working in tandem with learners, caregivers, partners, and community. A partnership approach to education requires respecting multiple worldviews that will foster understanding of the value of shared responsibility. A relational educator takes a humble approach to engaging in partnership, recognizing formal and informal power structures favour the dominant culture. Understanding and exploring the Treaty relationship invites educators to reflect on personal and professional responsibilities to reconciliation and as stewards of the land. The result of a purposeful educational partnership is improved outcomes for Indigenous learners.

The educator working to build partnerships will strive for diversity to support improved outcomes for Métis, First Nation, and Inuit learner success and support for reconciliation. These partnerships will embrace the idea of shared responsibility for learning and learners. The partnerships will grow at the school and community level. The improvement of educational outcomes and an increased sense of empowerment will begin with a culture of collaboration.

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**Partnership Indicators**

- Respect multiple worldviews
- Recognizes personal responsibility for recongiliation
- Commits to improving education outcomes for Indigenous learners
- Educator is aware of connection between the land and learning
- Educators and learners co-create critical components of the course

- Recognizes stewardship for land
- Recognizes formal & informal positions of power
- Embraces shared responsibility in learning
- Educator will seek out Indigenous scholarship in their field of study
- Commits to authentic relationships with all members of the learning journey to create a culture of collaboration

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## E. Action

Indigenization, decolonization, and reconciliation in teaching requires the educator to respond to the inequities in their classroom, in the school, and in the community. An action-oriented approach to education will involve taking concrete steps to obtain equitable outcomes for all learners with a focus on the success of Inuit, Métis, and First Nation learners. The initiative-taking educator takes responsibility to influence change for and with people in all parts of their lives including the classroom. The initiative-taking educator makes the conscientious choice to overtly affirm Indigenous culture and to deconstruct and adjust practices that rely on Western ways of knowing, being and doing.

A commitment to action and shifting the system requires utilizing or applying a variety of evidence-based teaching practices that honour individual learners and Indigenous cultures. An invitation to First Nation, Inuit, and Métis learners to share culture in a brave, safe space is one example of wise practice. A brave, safe space can be a response to the historical imperative. Committing to inclusion of Métis, First Nation, and Inuit voice in learning begins to address the dual history narrative. An educator taking initiative for change will employ social justice practices. This will support healing through the development of learner confidence and pride in self.

**Action Indicators**

- Commits to supporting Indigenous student success
- Accepts responsibility to influence change
- Responds to inequities in classroom
- Integrates Indigenous culture, language, and identity in teaching practice
- Achievement encompasses physical, emotional, intellectual, and spiritual outcomes in the course

- Strives for equitable outcomes for Indigenous students
- Affirms Indigenous ways of knowing, being, and doing
- Responding to systemic inequities in teaching and assessment practices
- Supports healing through the development of learner confidence and pride in self

## F. *Relationships* – *Miyeu wiichayhtoowuk*

"*You have to develop a relationship with Indigenous students. You can't keep your distance. They want to know you; they want to connect with you. They need to have a sense of belonging.*" (Goulet & Goulet, 2015, p. 105)

The Michif words for relationships (see above) highlight the importance of knowing and believing in one another. Moving forward together as partners in learning requires the creation of authentic, holistic relations. Lii vyeu (old people) share that the more we know about the stories and events that bring us to this day, the deeper the connection to learning we will have.

Reciprocity is a fundamental value in Inuit, Métis, and First Nation culture. Working to achieve respectful relations with Indigenous and non-Indigenous peoples benefits from the gifting and receiving of knowledge. Learning is a ceremony and when relationship between educator, learner, elders, and community results in authentic collaboration, change will happen.

Educators can strive to be inclusive of Indigenous knowledge to keep aligned with Métis, First Nation, and Inuit pedagogy. When Indigenous ways of knowing and doing become culturally relevant, all students can further respect the knowledge. Building authentic relationships will disrupt the idea that Inuit, Métis, and First Nation ways of knowing are secondary to the dominant culture. Since contact the dominant paradigm required First Nation, Inuit, and Métis to fit into the box created by the non-Indigenous.

A holistic approach to building relationships supports balance on all levels of ourselves. We are beings which need physical, emotional, intellectual, and spiritual balance to move forward. Having Elder, Knowledge Holders, and community engaged in the learning journey will provide avenues of support for maintaining balance. A First Nation, Inuit, and Métis perspective on education removes the compartmentalizing that learners may often experience with Western education. Indigenous Education is lifelong, connected to community, and integrates knowledge and personal growth.

**Pause for Thought**

1. **How does educator disposition impact learning?**
   Understanding the importance of relationships in learning, reflects on how educator disposition will advantage or disadvantage learning. What might the possible implications be for Indigenous and non-Indigenous learners?

2. **Consider an educator's position in teaching and learning, how can one create space for Métis, First Nation, and Inuit learners to retain their value system?**
   Reflect on barriers that work to assimilate Indigenous learners. What can an educator do, within their control, to change the system?

3. **How do educators engage in personal reflection aimed at examining bias and privilege?**
   What support do educators require for seeking to cultivate brave, safe spaces of learning to promote mutual learning and building of trust?

4. **How can an educator embrace the belief of shared responsibility for learning?**
   Reflect on how the education paradigm can shift to recognition that the educator can become the learner and the learner can become the educator. What steps must an educator take to affirm individual identity and co-construction of curriculum, instruction, and assessment?

## E. Applying the Knowledge (Curriculum, Instruction, & Assessment)

Educators have a responsibility for embedding IDR in all areas of teaching and learning. As mentioned earlier, when presented with the reality lived by First Nation, Inuit, and Métis learners, educators have a moral obligation to affect change. We can no longer maintain the status quo and hope that the situation resolves itself and learning becomes equitable for all. Alexander Den Heijer said it best, *"When a flower doesn't bloom you fix the environment in which it grows, not the flower."* For too long the responsibility to change outcomes for Métis, First Nation, and Inuit have been the responsibility of the learner and their families. The time has come to challenge education institutions (environment) to explore opportunities for change in policy and procedure and support learning for Inuit, Métis, and First Nation.

An understanding of the position First Nation, Inuit, and Métis experience daily will support the work moving forward.

- **First**, we must acknowledge that the current reality is historical and persistent.
  - This reality was here when we arrived and given that we inherited this reality, responding to it is everyone's responsibility.
- **Second**, if we are to change this reality for Métis, First Nation, and Inuit we must examine our own values, beliefs, and behaviors in relation to institutional policies and practices.
- **Third**, we can have influence if we hear from our First Nation, Inuit and Métis and listen to what they need.
- **Fourth**, Hon. Senator Murray Sinclair eloquently stated on December 13, 2013, "Education has gotten us into this mess, and education will get us out."

**Curriculum Renewal**

Trusting that educators have a disposition of reciprocity in place, curriculum renewal will be an effective starting place. Given that Indigenous knowledge has been present since time immemorial, authentic inclusion can across a multitude of curriculum is possible. Working in tandem with Elders, Knowledge Holders, and lii vyeu (old people) will ensure authenticity of the knowledge and affirm ways of knowing for the non-Indigenous student population.

Creating a balance between historical and contemporary knowledge is central to overcoming barriers. Too often educators rely on the past when advocating for Indigenous knowledge. This will reduce opportunities for growing understanding of an Indigenous response to current issues. As Métis, First Nation, and Inuit we are still here, we are knowledgeable, and we are striving to thrive.

Curriculum writers can begin with an analysis of current curriculum for content and voice. When the analysis is complete, and the curriculum writer appreciates the imperative to move forward, working in partnership with local organizations, tribal councils, and/or Métis/Michif Locals, can initiate the journey.

**Instruction Enhancement**

Predominant instruction strategies model Western tradition and history. Often, educators will instruct in a way they experienced, largely because it worked for them. When learners see themselves in curriculum, instruction, and assessment, they are more likely to achieve learning outcomes. The common instructional strategies used across education can improve outcomes for Inuit, Métis, and First Nation learners when enhanced with Indigenous pedagogy. This does not mean that Indigenous learners cannot succeed in the current traditional system. There are stories of success from across this land, sharing the story about the challenges faced to achieve success is of utmost importance. The realization is that more students could experience success when the principles of equity, diversity, and inclusion (EDI) are part of instruction. According to Statistics Canada in the 2021 census, 49.2 percent of Indigenous respondents reported having completed a postsecondary certificate, degree, or diploma (Melvin, 2023).

At the heart of Indigenous knowledge and instruction is authentic educator-learner relationships. Knowledge of the learner's story they bring with them to the learning space will provide the educator the opportunity to choose EDI strategies that support learner needs. First Nation, Inuit, and Métis learners can arrive at places of learning with the weight of the colonial history impacting their experience. The weight of this history will manifest itself in diverse ways depending on access to support services prior to and during the higher education experience.

Ownership of the learning is beneficial to Indigenous students and will support all learners (Alberta Education 2005). When a learner understands the learning journey, personal investment in the outcomes increases. An educator can position themselves as a partner who will facilitate the learning. Instructional strategies that build independence have increased engagement and motivation for Métis, First Nation, and Inuit learners. Examples include independent study, cooperative learning, service learning, and experiential learning. Each of these will engage learners with diversity of instruction and foster independence.

Educators can enhance instruction when they take a holistic approach to teaching and learning. This approach will support maintaining balance physically, emotionally, intellectually, and spiritually. The humble educator will seek guidance from elders and knowledge holders to understand each of these components. Recognition of the impact balance has on learning from an Indigenous lens will validate Inuit, Métis, and First Nation worldview. Jacobs (2013) drew attention to eight guiding principles of learning that follow holistic principles and will assist Indigenous learners.

1. *"Allow for ample observation and imitation rather than verbal instruction. Also allow students to take their time before attempting a task so the chances for success are higher on the first effort.*

2. *Make the group more important than the individual as often as possible in terms of both the learning process and learning goals.*

3. *Emphasize cooperation versus competition whenever possible.*

4. *Make learning holistic rather than sequential and analytic. Spend more time in dialogue talking about the big picture associations before looking at details.*

5. *Use imagery as often as possible. Einstein wrote that "'imagination is more powerful than knowledge,'" and Indigenous education takes advantage of this fact.*

6. *Make learning connect to meaningful contexts and real life.*

7. *Be willing to allow spontaneous learning opportunities to change pre-planned lessons.*

8. *De-emphasize letter grading and standardized evaluations and use authentic narrative assessments that emphasize what is actually working best and what needs more work." (Jacobs, 2013, pp. 70-71).*

When using these guiding principles, it is important to maintain the holistic view and avoid seeing this as a checklist that will accomplish the goal of supporting First Nation, Inuit, and Métis learning and achievement. Educators who can find a starting place based on comfort and current knowledge of the principles will support learners. Indigenization and instruction provide educators with guidance to chart the course in their instruction. The starting point will be determined by educator disposition. Reflecting on learning outcomes, diversity of learners, and personal understanding of Indigenous pedagogy will aid in decision making.

**Enriching Assessment**

As mentioned previously, curriculum and instruction embody Western tradition. Assessment follows this pattern and can take advantage of implementation of Indigenous pedagogy. Educators willing to explore a diversity of assessment strategies and provide voice and choice for learners are following Indigenous ways of knowing and doing. Indigenous pedagogy and assessment for learning share common criteria. Timely, responsive feedback used to guide the learning are the foundation of Indigenous learning. The fFeedback can take a variety of forms and educators and learners can be involved in the writing. Low-risk, high-reward learning will motivate learners and grow independence.

Métis, First Nation, and Inuit culture brings variables to assessment that may not be present with all other learners. Assessment can be mindful of the existence of colonization and the impact on Inuit, Métis, and First Nation learners. Working together can raise awareness of systemic barriers in education for Indigenous learners and offer solutions. First Nation, Inuit, and Métis advocate for maintaining rigor in higher education while recognizing the impact colonization has on their learning. Indigenous leaders advocate for maintaining

standards to enhance the learning experience of Métis, First Nation, and Inuit learners, while also acknowledging the necessity of providing appropriate support and intervention throughout their educational journey.

The support will take a variety of forms and will support all learners. An examination of Western traditional practices such as solid deadlines with penalties for missed due dates, no opportunity for second chances, or participation marks, provide an opportunity to reflect on purpose. This is often an assessment of behaviour and not directly connected to learning outcomes. On occasions where due dates are impacting the learning, educators and learners should engage in conversation that will shed light on the reasons for the delay and collaborate on solutions. Too often educator mindset explains these occurrences by articulating that "Indigenous learners don't have the discipline needed for higher education." This default position is disruptive and overlooks the impact of colonization on Inuit, Métis, and First Nation learners.

A diversity of assessment tools will likewise increase Indigenous learner achievement. Recognizing the diversity of learners supports the use of multiple assessment methods. Learners will increase success opportunities when presented with various methods used to express their knowledge. Assessment can take multiple forms connecting learning outcomes and knowledge evaluation. Mediums such as artwork, photo stories, reflective learning logs illustrate learners meeting course outcomes when used appropriately. This does not require educators to engage in wholesale assessment practice reform. A diversity of assessment used across the course will provide all learners the chance to illustrate their competency with outcomes.

**Pause for Thought**

1. **Reflect on the statement by Alexander Den Heijer, "When a flower doesn't bloom, you fix the environment in which it grows, not the flower."**
   How can you relate this metaphor to the educational challenges faced by Indigenous learners? Consider how changing the educational environment could impact these learners differently than trying to change the learners themselves.

2. **Consider the importance of listening and learning in relation to Indigenous pedagogy.**
   Reflect on your own educational or professional practices. How can you incorporate more inclusive strategies that genuinely listen to and reflect the voices and needs of Indigenous learners?

3. **Reflect on the compelling reasons for inclusion of Indigenous knowledge and perspectives in curriculum, instruction, and assessment.**
   How can you contribute to or advocate for the inclusion of Indigenous knowledge and perspectives within your curriculum? What steps can you take to ensure this inclusion is respectful and authentic?

4. **Highlight the enrichment of assessment strategies by embracing Indigenous pedagogy to provide more equitable and responsive education.**
   Reflect on the current assessment practices you are familiar with. How can they be adapted or expanded to include diverse, low-risk, high-reward approaches that honour Indigenous ways

of knowing and learning? What obstacles could educators face when implementing changes to assessments, and what strategies can be employed to overcome them?

## Summary

This chapter outlines compelling reasons for engaging in IDR and shares thoughtful strategies for accomplishing the goal. IDR may seem daunting in a time of increased pressure on higher education. Respectful relationship and advocation for IDR at all levels of education leadership will increase the opportunity for success. Everyone invested in education shares in the responsibility for completing the journey.

The time has come to realize the value of IDR in education. Moving from words that highlight strategic thinking in planning documents to actions witnessed in learning spaces will be a challenge. Committing to the actions is the first step. A choice to enhance current practice with humility, reflection, partnership, or action will begin to spread the ripples of change. As First Nation, Inuit, and Métis learners begin to achieve equity in education, understanding the imperatives for Indigenization provides motivation to see the work succeed. Education can take the lead on reconciling the relationship between Indigenous community and higher education.

Embracing the philosophy of the *Reciprocity of Relationship* model can be the springboard for creative change to inclusive curriculum, instruction, and assessment. Adopting a humble disposition can enhance educator-learner relationships with the goal of improved teaching and learning. Trusting the process of IDR can maintain balance in learning spaces and support all students. When educators commit to support for Indigenous student success, healing can begin.

Indigenous and Western based pedagogy can co-exist. The learning spaces will benefit greatly when IDR becomes embedded in education. Indigenous and non-Indigenous learners, educators, and community can work together to make inclusion of Indigenous ways of knowing and doing a reality. Working together will impact curriculum, instruction, and assessment, and commit to reconciliation.

**Final Thoughts**

1. **How can educators navigate the complexities of incorporating Indigenous worldviews, knowledge, and perspectives into post-secondary education while fostering mutually respectful relationships between Indigenous and non-Indigenous peoples?**
   What must educators accomplish personally and professionally to build authentic, healthy relationships?

2. **Reflect on the imperatives outlined for engaging in Indigenization, decolonization, and reconciliation (IDR) in education.**
   Which imperative resonates with you the most personally or professionally, and why? Consider

how your understanding of this imperative might influence your approach to incorporating Indigenous perspectives and practices into your teaching or educational institution.

3.  **Reflect on the complex interplay between IDR within the context of education renewal. Consider how diverse groups, including Indigenous peoples, non-Indigenous educators, and community leaders, contribute to each component of IDR.**
    How can strategic leadership from diverse stakeholders help reduce barriers to implementation and foster authentic engagement in creating a more inclusive and equitable education system?

4.  **Reflect on the role of educators in embedding IDR into all aspects of teaching and learning. How can curriculum renewal, instruction enhancement, and enriching assessment practices align with Indigenous pedagogy and values, while also acknowledging and addressing the systemic barriers faced by Métis, First Nation, and Inuit learners?**
    Consider how incorporating Indigenous ways of knowing and doing can promote equity, diversity, and inclusion in educational practices, fostering greater learner engagement and success.

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## About the author

## Darryl Isbister

Darryl Isbister is a Métis citizen whose family comes from the Kinistino area of this land called kisiskâciwan (Saskatchewan). He is an advocate for indigenization, decolonization, and reconciliation in education. Furthering the enhancement of teaching and learning with Indigenous pedagogy guides his practice as a teacher and leader.

Tara A. Karasewich

# Accessibility in Higher Education

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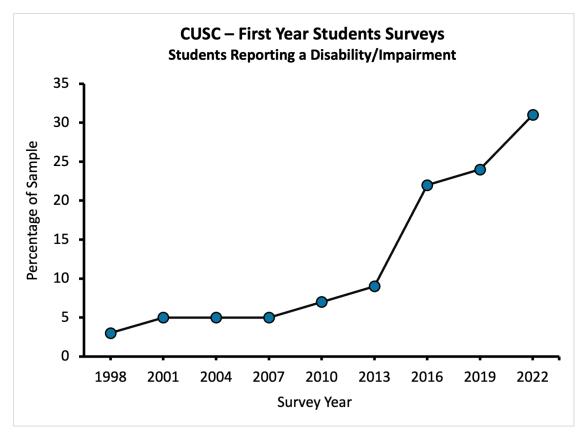Department of Psychology
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## Introduction

The most recent Canadian Survey on Disability (CSD) estimates a disability rate of 27% among Canadians 15 years and older (i.e., 8.0 million people), with *disability* defined as a long-term condition that limits daily activities (Statistics Canada, 2022). Past Statistics Canada surveys have found disability to be associated with lower education achievement (e.g., Berrigan et al., 2023; Canadian Human Rights Commission, 2017), and this is true of the 2022 CSD as well. For example, among the 25-to-44-year age group, disabled[1] Canadians were more likely than non-disabled Canadians to have a high school diploma (23.6% vs. 19.4%) or college degree (23.3% vs. 19.8%) as their highest level of education, while they were less likely to have completed a university degree (33.2% to 44.5%). There are many benefits to higher education – including an increased likelihood of being employed, higher salaries, and a positive association with healthy lifestyles (e.g., Ma et al., 2016; Morris et al., 2018) – so it is essential that post-secondary programs be accessible to all.

The Canadian University Survey Consortium (CUSC), who have been collecting data on students' experiences at universities across Canada for thirty years, has observed a sharp increase in the enrollment of disabled students over the last decade (CUSC, n.d.). Figure 1 below plots data from all CUSC surveys that have examined first-year undergraduate students, and shows two distinct 'jumps' in the number of students who self-report having one or more disability: in 2016, when the rate rose from 9 to 22%, and in 2022, when it rose from 24 to 31%. Similar increases in disability rates have been observed in colleges across Canada as well (Deloitte, 2017). Mental health-related disabilities have shown the greatest rate of increase not only among higher education students but in the young adult population of Canada more broadly, which could be a sign of problems within the mental health supports available for youth (Moroz et al., 2020; Statistics Canada, 2023). However, these trends may also be the result of positive changes, such as: increased understanding of disability symptoms and

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1.

In this chapter, I will be primarily using identity-first language (e.g., 'disabled person') instead of person-first (e.g., 'person with disability'), to follow the lead of disability studies and acknowledge the ways in which environments that are built for the dominant, non-disabled, majority create barriers that disable (Dunn & Andrews, 2015; Fleet & Kondrashov, 2019).

earlier diagnoses, greater support to disabled students in secondary education, and decreased stigma (Deloitte, 2017; Stewart & Schwartz, 2018). In any case, it has become increasingly important to ask how post-secondary institutions can ensure they are meeting the accessibility needs of disabled students.

**Figure 1**



*Note.* Sample size varied by survey year: 5,548 in 1998, 7,093 in 2001, 11,132 in 2004, 12,648 in 2007, 12,488 in 2010, 15,218 in 2013, 14,886 in 2016, 18,092 in 2019, 15,157 in 2022. The full list of disabilities respondents could select is available for half of the survey years (i.e., 2001, 2004, 2016, 2019, and 2022). Although there was some variation, these surveys all included the categories of *mental health, learning, mobility, hearing, speech, other physical disabilities,* and an option to specify another type.


In this chapter, I examine the state of accessibility in higher education. First, I outline the rights of disabled students in Canada and how the legal duty to accommodate applies to the post-secondary environment. I then discuss two broad approaches that educators in colleges and universities can take to be inclusive of disabled students. At the individual level, instructors may grant accommodations to disabled students, as recommended by their institution's disability services. At the course level, instructors may use principles of universal design to increase the accessibility of their class materials, activities, and assessments. Although I present these approaches separately, they are not mutually exclusive; instructors and institutions must still address individual need even when implementing universal design. I end this chapter by calling for accessibility to go beyond the classroom: to remove barriers to entry, ensure disabled students can participate in *all* aspects of post-secondary life, and better support them in entering the workforce.

## The right to pursue higher education

The Canadian Charter of Rights and Freedoms (1982) guarantees every individual equal protection and benefit of the law without being discriminated against for having a mental or physical disability. A recent federal law, the Accessible Canada Act, provides further protections for disabled Canadians in multiple areas – including employment, communication, and transportation – with the goal of "creat[ing] a Canada without barriers by 2040" (Canadian Human Rights Commission, 2023). Unlike its counterpart in the United States, the Americans with Disabilities Act (1990), which explicitly requires postsecondary education to be offered in an accessible manner, the Accessible Canada Act does not apply to most colleges or universities. Instead, the rights of disabled Canadian students are protected through a mix of legislations that have been passed in response to human rights complaints, guidelines created by some provinces, and the United Nations' Convention on the Rights of Persons with Disabilities (Jacobs, 2023).

Four Canadian provinces have accessibility legislation which explicitly states that disabled persons have a legal, human right to pursue post-secondary education, through the: Newfoundland and Labrador Accessibility Act (2021), Nova Scotia Accessibility Act (2017), Québec Act to Secure Handicapped Persons in the Exercise of Their Rights (2004), and Saskatchewan Human Rights Code (2018). The Accessible British Columbia Act (2021), which is in development, has also identified education as one of the areas for which it will provide accessibility standards.

Three other provinces have developed comprehensive accessibility guidelines for post-secondary education, through their Human Rights Commissions: Alberta (2021), New Brunswick (2017), and Ontario (2004). All three guidelines note that institutions have a *duty to accommodate* disabled students, up to the point of undue hardship. The Ontario guidelines describe appropriate accommodation as what "most respects the dignity of the student with a disability, meets individual needs, best promotes inclusion and full participation, and maximizes confidentiality" (Ontario Human Rights Commission, 2004, p. 26). Appropriate accommodations remove barriers to disabled students *without* compromising academic standards. Thus, the Alberta guidelines note that disabled students have the same "responsibility to develop the essential skills and competencies of all students" (Alberta Human Rights Commission, 2021, p. 8), and the New Brunswick and Ontario guidelines refer to the need for disabled students to meet the *essential requirements* of their programs. Educators are expected to carefully consider what knowledge and skills are essential for students to have obtained in order to pass a course and earn their degree, when determining which approaches can be taken to ensure access for disabled students (see Norris et al., 2023 for practical advice on this process).

## Accessibility through student accommodations

Most Canadian colleges and universities have a designated office to serve disabled students and help educators meet the duty to accommodate them. Such disability services work with students to collect documentation regarding their disability, identify their needs and limitations in the academic context, and provide recommendation of specific accommodations (Condra et al., 2015). There are a variety of accommodations that can be recommended, targeting: the delivery of course content (e.g., captions required for video; copies of lecture material provided in advance), classroom structure and activity (e.g., priority seating; permission to take breaks), the format of assessments (e.g., typing responses to a written exam; recording an

oral presentation), the timing of assessments (e.g., an extension on an essay; extra time on an exam), and other aspects of a course (e.g., Fichten et al., 2022; Norris & Karasewich, 2022; Parsons et al., 2020). It is typically the responsibility of disabled students to request such accommodations from their instructors and for instructors to make the appropriate arrangements. A written recommendation from disability services can act as a layer of protection for disabled students during this process, allowing them to keep the details of their disability private and focus on their needs (Alberta Human Rights Commission, 2021; New Brunswick Human Rights Commission, 2017; Ontario Human Rights Commission, 2004).

There are several issues with the standard approach of providing individual student accommodations. First, it is important to recognize that registering with disability services can be a long and effortful process, and that many students face additional barriers to getting the support they need. Formal assessments for some types of disability can have a high cost (e.g., learning disabilities), and students from lower socioeconomic backgrounds are likely to have trouble navigating this cost and the bureaucratic process of obtaining accommodations (Waterfield & Whelan, 2017). Students may also be wary of disclosing details of their disability, even to staff within disability services, for fear that instructors, staff, and peers may view them negatively or discriminate against them (Bruce & Aylward, 2021; Lindsay et al., 2018; Toutain, 2019). In response to such concerns, the Ontario Human Rights Commission has recently changed their guidelines to allow students with mental-health disabilities to register with disability services without needing to provide a formal diagnostic label – instead, their healthcare provider must only confirm the presence of a disability and identify limitations that would impact their academics (Condra & Condra, 2015; Ontario Human Rights Commission, 2016). This change puts the onus on healthcare providers to determine the ways that a student's disability could impair them at school, but many do not have adequate training to do so, which may lead to students receiving accommodations that are inappropriate for their needs (Harrison et al., 2018).

Many post-secondary institutions in Canada are facing financial difficulties, particularly in Ontario where the provincial government has kept tuition fees frozen for several years while also cutting funding (Usher & Balfour, 2023). This puts increased pressure on disability services, who have already been strained to support increasing numbers of disabled students, and may force them to settle for recommending accommodations that are less tailored, more cost-effective, and require less time to process (Deloitte, 2017; Sokal & Vermette, 2017; Toutain, 2019). Instructors are also feeling strained by having to implement high numbers of accommodations with inadequate knowledge or support, leading some to hold negative attitudes toward disabled students or respond in inappropriate ways (e.g., Sniatecki et al., 2015; Sokal, 2016). Overall, the accommodations approach to accessibility requires a large amount of resources and time from students, instructors, and disability services alike, without necessarily meeting the needs of disabled students.

## Accessibility through universal design

The accommodations approach to accessibility is *reactive* –instructors and disability services respond to the individual needs of students as they arise – but accessibility in higher education can be approached *proactively*. To do so requires a change in how disability is viewed: instead of the *medical* model, that focuses on disability as an impairment students bring into the classroom, the *social* model focuses on the classroom environment itself and the barriers it creates for disabled students (Olkin, 2002; World Health Organization, 2021). Instructors can take steps to remove such barriers through *universal design* (Fleet & Kondrashov, 2019).

Universal design as a concept emerged in many different forms around the world during the mid-twentieth century, but the term itself originated in architecture, where Ron Mace (future founder of the Center for Universal Design) used it to describe the process of designing buildings, products, and services to be accessible to the greatest extent possible by everyone (Ostroff, 2011). Universal design considers diverse needs in all forms. For example, creating a shallow ramp up to a building's entrance allows access not only to disabled people who use assistive devices like wheelchairs, but also to parents with strollers, small children, and anyone else who may have short- or long-term difficulty using stairs. Since the 1990s, multiple methods have been created to apply principles of universal design to education – including, but not limited to: Universal Instructional Design (UID), Universal Design for Instruction (UDI), Universal Design in Education (UDE), and Universal Design for Learning (UDL) (Burgstahler, 2023; CAST, 2018; McGuire et al., 2006; Pliner & Johnson, 2004; Scott et al., 2003). In all of these methods, instructors are encouraged to include more flexibility in their lessons, activities, and assessments, and to not only expect but welcome differences among their students. When instructors design their courses to anticipate the needs of disabled students, they can reduce the number of accommodations they provide on an individual basis, such as in the examples listed in Table 1, below. Importantly, because universal design applies to *all* students in a course, disabled students will benefit even if they are not registered with disability services, for whatever reason (e.g., lacking the means to get documentation, processing delays, lacking awareness of supports, fear of discrimination, etc.; Li et al., 2020; Lindsay et al., 2018; Waterfield & Whelan, 2017).

**Table 1**

*Accommodations and Universal Design*

| Student Accommodation | Universal Design |
|---|---|
| A student registered with disability services is given class material in advance so that they can access it using adaptive technology or have it adapted into an accessible format | All students in a course are given class material in advance, which was created following accessibility guidelines |
| A student registered with disability services is given an alternative written assignment in place of oral participation during class | All students in a course are given multiple opportunities to participate, including both oral and written options |
| A student registered with disability services is given an additional thirty minutes to write a one-hour exam | All students in a course are given two hours to write an exam that would take the average student one hour to write |
| A student registered with disability services is given a three-day extension for an essay | All students in a course are given a three-day grace period to submit an essay without penalty |

*Note.* This table presents examples *only* of student accommodations that could potentially be provided at the course-level, through universal design.

In higher education, individual courses are typically designed by the same faculty member or graduate student acting as the instructor for that term. The decision of whether or not to apply universal design to a course thus rests with the instructor. There are many reasons that an instructor may be wary of universal

design, including: limited knowledge of how to implement it, a lack of time or resources, or minimal institutional support for trying new teaching methods (Hills et al., 2022; Li et al., 2022). Some of the changes encouraged by universal design require more effort than others. For example, in a class that incorporates many videos into lessons, adding accurate captions will require time and skill using software that instructors may not have, but could be supported through (Kent et al., 2018). Ultimately, instructors will be more likely to implement universal design in their courses, and more effective in their practice, when they have support from their institution, through: training workshops, shared resources, expert help with creating accessible formats, rewards for their efforts, etc. (Fleet & Kondrashov, 2019; Hills et al., 2022; Li et al., 2020).

### Universal design and individual need

Although education scholars often present universal design as an *alternative* to student accommodations, it does not actually promise to meet *every* possible need for accessibility (McGuire et al., 2006). In some cases, universal design practices may even exacerbate or create new barriers for disabled students. For example, if an instructor makes the format of an assessment flexible by allowing students to complete a written assignment in place of an oral presentation, many students may choose the alternative due to anxiety and then miss an opportunity to develop important skills in both oral communication and anxiety management (e.g., Griful-Freixenet et al., 2017). Where giving oral presentations is deemed an essential skill for the course or program, instructors should instead consider other methods of providing students with flexibility and support, such as by giving them opportunities to practice in low-stakes environments or the option to record a presentation in a video format.

The accommodations that are recommended for disabled students can vary greatly, and it is not always possible, or practical, for instructors to meet every accommodation through course design. For example, when an instructor has determined that a monitored, timed exam would be the best way of assessing student knowledge, it may be feasible to cover any accommodations that recommended providing extra time for disabled students by giving all students in the course double the amount of time they would normally give to write the exam. It would be far *less* feasible for the instructor to administer the exam in a space that covers all accommodations related to room structure (e.g., no fluorescent lighting) or size (e.g., private or semi-private rooms) – instead, separate arrangements would still need to be made for students with those accommodations. Such an approach aligns with the Ontario Human Rights Commission's (2004) three-step recommendation for ensuring disabled students are able to participate in education to the fullest extent possible:

1.  Promoting Inclusive/Universal Design

    All aspects of education – courses, facilities, policies, etc. – should be designed by instructors and institutions to meet accessibility standards from the outset.

2.  Removing Barriers

    Where barriers already exist, instructors and institutions should make changes to remove them, up to the point of undue hardship.

3.  Accommodating Remaining Needs

Where barriers cannot be removed, alternatives should be explored through individual student accommodations.

## Accessibility beyond the classroom

A button that can be pressed to open an automatic door does not make a room accessible if it is in a building that can only be entered via stairs. Similarly, students' disabilities do not start or end at the doors of their classrooms, and neither should our efforts to make higher education accessible. First, disabled students need more support in transitioning to post-secondary education and navigating differences between the individual education plans they may have received in secondary school and the accommodations process of higher education (Parsons et al., 2020; Parsons et al., 2021). Programs could also be developed to help disabled students with the unique barriers they face outside of their academics, where they may feel excluded from their campus communities or face stigma from non-disabled peers (Shpigelman et al., 2022; Maconi et al., 2019). Finally, disabled students should be provided with targeted support for transitioning from postsecondary education to the workforce, where they are more likely to have difficulty finding employment compared to their non-disabled peers and where they may face discrimination (Stewart & Schwartz, 2018). Disabled students can greatly benefit from work-experience programs that give them opportunities to practice career skills and connect with employers, but only a minority of Canadian institutions offer programs that are accessible to them (Bellman et al., 2014; Gatto et al., 2021; Mowreader, 2024).

## Summary

Disabled Canadians have a right to pursue higher education. It is necessary for post-secondary institutions to provide an accessible learning environment that allows disabled students to fully participate and show they have mastered the essential requirements of their program. This is no simple feat, however, with limited funding and increasing numbers of students in need. The standard, individual accommodations approach to accessibility can require a high amount of time and effort for all involved – students, instructors, and staff – and will leave some disabled students with no or inadequate support. Approaching accessibility from the course level, through universal design, has the potential to provide support for disabled students with less reliance on individual accommodations, though it will not eliminate individual need entirely. Instructors should be provided with more support to implement universal design in their courses and respond effectively to remaining needs for accommodation. Finally, post-secondary institutions must look outside of the classroom to ensure they are providing an accessible environment for disabled students to transition into higher education, participate in all aspects of campus life, and prepare to enter the workforce.

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# The Developmental Perspective on Youth in Post-Secondary Education

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## Introduction

Typically, youth entering post-secondary education (PSE) in North America have just completed high school at an average age of 18, which is still considered "late adolescence". At the same time, this is the age period in which societal sanctions and permissions of adulthood take effect (e.g., voting, criminal sentencing). Thus, first year students are in a developmentally liminal period in which they are still maturing and continuing in a student role but at the same time are often initiating their independence and self-sufficiency. The purpose of this chapter is to provide a developmental science lens on important maturation processes that pertain to PSE-aged youth. In particular, we describe three focal areas of development that are relevant to all youth at this age: identity, emotion regulation, and interpersonal relationships. Before delving into those domains, however, we first provide details about the scope and context of our approach.

First, our emphasis throughout is on universal processes endemic to all youth and how these may play out in a PSE context. This is a select group of youth that enters PSE who have a greater preponderance of some characteristics (e.g., ability to get good grades in high school) and less of others (e.g., antisocial or criminal behaviour). Nonetheless, the biological and social forces we cover are not specific to this population. What is unique are the differing pathways in which developmental processes unfold within each individual given the PSE context. For example, all youth are experiencing brain maturation but each individual is shaping those maturation processes with their own unique experiences.

Second, we are limiting our coverage to the lion's share of incoming students who fit a particular developmental profile. Namely, that these youth are entering PSE in late adolescence, just after completing high school, as opposed to those who enter later in adulthood or do not attend at all. Even though some of the challenges of the entry and completion of PSE are shared by all ages, there is far more theory and research, and therefore understanding, of the typical 18-year-old first year student.

Third, by extension, we also exclusively consider the North American PSE experience. Nonetheless, where appropriate, we will discuss how various aspects of cultural or geographic diversity may be relevant to developmental processes.

Finally, we will touch on a few broader themes throughout. One is the concept of affordances. Drawn from ecological theories of perception (Gibson, 1979), a given context or situation can constrain or enable particular behaviours to make them less or more probable to occur. Post-secondary programs, for example, afford scholarly behaviours and interactions with others with interest or expertise on a particular topic. From a developmental perspective, affordances limit or enhance opportunities for experiences that shape one's development.

This relates to a second theme as well: digital affordances (Manago et al., 2020). Schools at all levels are now reliant on digital technologies and students rely on these technologies for educational, social, and recreational purposes. This has introduced novel affordances as the context for development that constrain and enable particular experiences (e.g., the speed and distance at which social interactions can occur). Although a deep dive into the digital landscape is beyond the scope of this chapter, we will touch on these affordances throughout where relevant. Our perspective is that the digital realm provides extended contexts in which well-known developmental processes can transpire by serving the fundamental needs of agency (self-directed behaviour) and communion (connecting with others) in identity development (Granic et al., 2020), opportunities to experience and manage emotions (Hollenstein & Colansante, 2020; Hollenstein & Faulkner, 2023), and the initiation and maintenance of relationships (Chen & Katz, 2009; George & Odgers, 2015). That is, although these affordances have been available only recently, there is nothing fundamentally different about current cohorts of youth (e.g., gen Z) in terms of core developmental processes.

In the next section, we summarize the broad features of adolescence and the transition process towards adulthood. This will cover historical perspectives and biological changes that define this age period. With those general features in mind, we will cover three domains most relevant for a developmentally oriented understanding of university students. First, we cover the process of identity formation that begins prior to post-secondary but is ongoing into the post-secondary years and beyond. Next, we will describe how emotions and their regulation develop within the context of academically and socially challenging circumstances in PSE. Finally, we tie these together by considering the change landscape of family and peer relationships fomented by the transition to PSE.

## Adolescence To Adulthood

The modern conceptualization of adolescence began with G. Stanley Hall (1904) who recognized the growth of this age period during the industrial era. All cultures throughout history have had some concept of the liminal space between childhood and adulthood (Schlegel & Barry, 1991), but this period became longer and more defined in the modern era. There is nearly unanimous agreement that adolescence begins with the onset of puberty. However, the age at which adolescence ends is socially determined and differs widely across cultures and historical periods. Norms and trends of the past 150 years have delayed the end of adolescence, as the number of children in families has decreased and investment into children's education has increased (Dahl et al., 2018). Thus, particularly for those attending PSE, familial and societal resources support extended opportunities to develop and mature before becoming fully independent and materially self-sufficient.

This delay in the start of adulthood and the various complexities and variations of modern life have rendered strict stage-based definitions of age periods difficult to contend with. Unlike clear developmental milestones that occur in infancy with only slight variation in age of onset across individuals (e.g., walking, talking), development after puberty varies in timing, rate, and quality across individuals to such an extent that any categorical definition of age ranges of stages is not universally applicable. Thus, although several terms have been used, such as late adolescence (late teens), emerging adulthood (20-29; Arnett, 2007), or early adulthood (Cote, 2014), they do not adequately capture what is developing in all individuals but rather better reflect societal expectations and economic constraints (Cote, 2014).

We suggest the alternative is to focus on process rather than stage categories. Process refers to the patterns of thought, feeling, and action that unfold over time. These patterns can be recognized and described developmentally as long as they are not rigidly attached to specific ages. In this way, development is viewed as ongoing — a journey, not an arrival.

Furthermore, a process account also includes event-based perturbations or transitions as the means through which old behavioural patterns may give way to new ones (Granic et al., 2003; Hollenstein et al., 2013). Transitions can be idiosyncratic (e.g., relationship break up) or more universal (e.g., completion of formal schooling), but either can initiate a period of variability and vulnerability that leaves one open to new experiences. As we will highlight in subsequent sections, the entrance into PSE is a profound example of this kind of transition that punctuates developmental processes. Indeed, the first year, particularly the first semester is the most challenging for youth (Conley et al., 2014). Compared to previous adolescent levels, the first year is associated with greater stress (Conley et al., 2014), loneliness (Larose & Boivin, 1998), depression (Bewick et al., 2010), and anxiety (Doane et al., 2015). Fortunately, across the 4 years of university, distress decreases (Sheretal.,1996) and general well-being increases (Schulenberg et al., 2005). Thus, the initial transition period brings unique challenges that are distinctive from the trajectories toward greater resilience at the end of obtaining a degree.

From a developmental perspective, the uncertainty, vulnerability, and variability that occurs at developmental transition points, such as the first few months at university, is both a challenge and an opportunity (Dahl, 2004). In order for new habits, patterns of behaviour, or even ways of thinking to emerge, there necessarily has to be a breakdown of previous ones (Granic et al., 2003; Hollenstein & Tsui, 2019). For example, for those who had adverse experiences in childhood or adolescence, the transition may offer an opportunity for a new start (Huguenel & Conley, 2020). Thus, although such transition processes can be uncomfortable and anxiety provoking, they are simultaneously part of universal processes of growth and change.

Before extending into our three topic areas, we would like to note one further developmental detail as background. As any insurance company knew a long time ago when developing their rental car policy for those under age 25, the development of the human brain continues through late adolescence and into adulthood. Although there are myriad brain changes after age 25 due to experience (e.g., learning to play the piano at age 50), the major structural development that begins in infancy continues into the mid-20s (Giedd, 2004). By structure, we mean the number of neuronal connections (i.e., gray matter) and the insulation that facilitates the speed of connection (i.e., white matter). White matter increases with age but, perhaps counterintuitively, gray matter decreases precipitously throughout adolescence. This is because humans have an overabundance of

neurons and synapses early in life that are enhanced when used often and wither when not used (Blakemore, 2012). This pruning is due to experience and culminates during or just after post-secondary age.

Importantly, the last regions of the brain where this pruning of gray matter occurs is in the dorso-lateral prefrontal cortex – the areas near the top of your head between ears and forehead. This area has the most connections with all other areas of the brain because it is involved in various processes such as working memory, synthesizing and manipulating the information held in working memory, perspective taking, delay of gratification, and self-control (Steinberg, 2010). Not only are these important processes that facilitate academic success, but they also contribute to the developmental changes in identity, emotion regulation, and social interactions that are covered in the next sections.

## Identity Development

The post-secondary experience is often one of questioning and exploring different versions of oneself that may exist, with the final goal of choosing or committing to one coherent self. This is the process of identity formation, centered around the question of "Who am I?" Choosing which major to declare, what clubs to join, with whom to be friends, and how and when to rely on parents are all identity relevant challenges typically faced during the transition to PSE, making identity formation a preeminent developmental goal in this time period. This section will: (a) describe the process of identity formation and how it unfolds during post-secondary, (b) explain how individuals find meaning in their environment and incorporate that into their sense of self, in order to further this process, and (c) highlight the social nature of identity formation.

### The Identity Formation Process

Identity formation is an iterative cycle of *exploration* of identities and *commitment* to those which support the realization of a cohesive sense of self. For example, a student entering PSE could think of themselves in terms of their major (e.g., a sociology student), group memberships (e.g., a polo player), characteristics (e.g., smart, compassionate), or interests (e.g., philosophy, volleyball). This process unfolds developmentally through two cycles: the identity formation cycle and the identity maintenance cycle (Luyckx et al., 2006), both made up of different types of exploration and commitment. The identity formation cycle involves exploring multiple different identities, and committing to the ones that feel like a good fit. In the identity maintenance cycle, the commitments made in the previous formation cycle are further evaluated and the individual either deepens their identification with these few commitments or begins the identity formation cycle once again.

Exploration of either type appears to be at its peak at 18-19 years old (Luyckx et al., 2013). This means that the transition to, and first couple of years of, post-secondary can be characterized by high levels of exploration through questioning previously made commitments, or actively seeking out new ones to explore. All types of exploration can foment instability or uncertainty and may manifest as temporary negative feelings (Crocetti et al., 2023; Luyckx et al., 2013; Schwartz et al., 2013). However, by and large these normative emotional challenges are short lived and resolve as an individual progresses through their cycles towards more stable commitments. Those that manage to explore their identity in both depth and breadth are likely to end up with stronger and more resilient commitments that can withstand subsequent challenges and future life transitions (Branje et al., 2021; Crocetti et al., 2023; Schwartz et al., 2013).

*Narrative Identity: Communion, Agency, and Cohesion*

Narrative identity theory further elaborates the *intrapersonal* processes through which this certainty is reached, and commitments are made (McLean, 2008). According to the theory, it is through narratives (i.e., stories about the self and how one came to be who they are), privately thought or publicly shared, through which youth make sense of life events and the role that they play in them (McAdams, 2019). By integrating these self-narratives with personal and societal values, they build a unified and cohesive life story (Granic et al., 2020; McAdams, 2019).

Intrapersonal narrative identity formation emerges from a tension between two key psychological needs: agency and communion (Granic et al., 2020; Schwartz et al., 2005). Agency is the need to individuate, take control in making choices, and think from one's own perspective. Communion is the need for connectedness and belonging. In childhood and early adolescence, communion is central to how individuals understand themselves; however, by mid-adolescence, the focus turns to agency narratives as individuals seek to differentiate themselves from others, especially family. However, university-aged youth work to balance and utilize both in their narratives (Branje et al., 2021). The structure of higher education facilitates both these needs and their integration. The individuation of agency occurs through such features as course and major selections, or any choice made in an effort to differentiate oneself from others. Communion needs are met through various social affordances such as the dormitory system, interactions with classmates, and opportunities to connect with others who share interests.

Although much of identity formation can be internal, focused on characteristics, behaviours, or future plans, often the values and categories considered are *interpersonal* via their relation to various social groups (i.e., Crocetti et al., 2023; Tajfel & Turner, 2004). Existing social groups such as families, religious groups, social clubs, and even educational disciplines can provide a template for youth to understand the values, beliefs, and behaviours typical of a group member. Youth can then explore these qualities when choosing their own values, beliefs, and behaviours, and evaluate their commitment to their group membership (Crocetti et al., 2023). The post-secondary environment often exposes students to new groups and identities of which they were previously unaware, or even groups who share identities that previously seemed unique to themselves (Kroger et al., 2010). For example, a student who was adopted may not meet others who share their experience or racial identity until they are part of a larger campus community. These experiences may stimulate new identity formation cycles (Huguenel & Conley, 2020).

As we have highlighted, the development of identity can be emotionally distressing at times, and it is also a social process. These are the themes we take up in the ensuing sections. First, we consider how capacities to manage emotional states comes to maturity at this age. Then, we consider how relationships with family and peers – the close others with whom youth work out their narrative identities – change and develop during the post-secondary years.

## Emotion Regulation

The transition to post-secondary presents a series of novel challenges for youth to manage in the domains of school/work (e.g., more difficult workload), social relationships (e.g., new social situations to navigate), and

personal finances (e.g., managing money and paying bills; Arthur & Heibert, 1996). Finding ways in which youth can deal with these new demands can be stressful (Cantor et al., 1987), as these stressors can be often perceived as uncontrollable and unpredictable (Sapolsky, 2004). Emotions, such as anger, sadness, and particularly anxiety, are natural responses to these stressful challenges (Folkman & Lazarus, 1985). Moreover, the type and quality of emotional experiences may change for youth entering PSE. For example, from the summer before entering university to the end of the first semester, positive emotional experiences become less frequent, while negative emotional experiences are stably maintained (Rogers et al., 2018). Given the novelty and breadth of these stressors and the emotions that accompany them, youth need to further develop and apply efforts to manage, or regulate, those emotions.

Emotion regulation refers to the ways in which an individual attempts to *change* their emotional experience (Thompson, 1994), which can be achieved through a variety of strategies that alter different aspects of emotional experiences (e.g., thoughts, feelings, or behaviours). For example, cognitive reappraisal is the attempt to change one's evaluation of the meaning of an emotional experience (i.e., considering a different perspective; McRae et al., 2012), whereas expressive suppression is the attempt to hide facial expressions of emotions (Gross et al., 2006). Because emotions and stressors occur throughout daily life in PSE, youth use a variety of emotion regulation strategies daily to alter their emotional experiences (Heiy & Cheavens, 2014).

The range of an individual's emotion regulation strategy use is referred to as their "repertoire," which may be large and diverse (i.e., containing a wide array of emotion regulation possibilities) or small and limited (i.e., relying on only one or two strategies for all emotional experiences; De France & Hollenstein, 2017, 2019; Lougheed & Hollenstein, 2012). Compared to adolescents, post-secondary-aged youth have developed a larger repertoire of emotion regulation strategies (De France & Hollenstein, 2019; Zimmermann & Iwanski, 2014). For example, expressive suppression (i.e., decreasing one's facial expression of emotion) and cognitive reappraisal (i.e., thinking about the emotional trigger in a different way) are used more often in emerging adulthood than in adolescence (De France & Hollenstein, 2019; Zimmermann & Iwanski, 2014), though their use appears to decline later in PSE schooling, as youth have adjusted to their new environment at school (Compas et al., 1986; Park et al., 2020).

This repertoire expansion might occur for several reasons. First, PSE-aged youth are still maturing cognitively, which reflects the structural brain changes mentioned earlier (Mills et al., 2016). Subsequently, youth are better able to execute challenging emotion regulation strategies that they could not use as effectively when they were teenagers. Reappraisal, for example, requires more cognitive effort (Suri et al., 2015) and is even taught in various forms of therapy (Beck & Dozois, 2011). Importantly, reappraisal is considered central to competent social and emotional functioning as it is typically applied early in the onset of an emotion and is associated with greater well-being (Aldao, et al., 2010). With cognitive maturation, reappraisal becomes easier to implement (McRae et al., 2012), and is even used more frequently than other strategies like expressive suppression (Nezlek & Kuppens, 2008; Zimmermann & Iwanski, 2014, 2018).

Second, PSE-aged youth with their broader repertoires are implementing emotion regulation more contingently by selecting strategies in accordance with situational demands. It is beneficial to use multiple emotion regulation strategies in a flexible and context-dependent way (Bonanno et al., 2004; Westphal et al., 2010), rather than exclusively using one or two strategies across all situations. For example, specific strategies are selected to handle specific emotions (Heiy & Cheavens, 2014; Smith et al., 2022) and different emotion

intensities (Dixon-Gordon et al., 2015; Wylie et al., 2023). Emerging adults also choose specific strategies when they are with specific people (e.g., expressive suppression is used more around strangers than close others; English et al., 2017) and depending on how much control they feel they have over the situation (Haines et al., 2016; Medland et al., 2020).

Finally, emerging adults might be better able to balance their short- versus long-term goals in their emotion regulation attempts with a broader regulation repertoire. For example, although expressive suppression use is associated with short-term costs, such as negative evaluations and judgements from others (Srivastava et al., 2009; Tackman & Srivastava, 2016), it can also be used for long-term benefits, such as conflict avoidance (English et al., 2017). With maturation, PSE-aged youth are better able to consider these short- and long-term costs and benefits, enabling more effective regulatory fit to each situation.

These developmental changes in strategies and repertoires, however, have so far been examined mostly in North American PSE contexts. Hence, it is unknown how culturally specific the findings are. Because there are cultural differences in both the experience and expression of emotions (Matsumoto et al., 1998), the developmental timing of changes in either repertoire or flexible strategy deployment may be diverse. For example, emotion regulation strategies like expressive suppression may not show the same developmental change and may be used less in North America compared to East-Asian cultures (Butler et al., 2007; Soto et al., 2011). This may be particularly relevant in North American PSE contexts given the relatively high proportion of international students on these campuses.  However, although there may be different patterns due to differing models of emotional enculturation, more general developmental processes (e.g., structural brain maturation, identity development) are universal. Thus, improvements in emotion regulation are expected for all students, but the manifestations may differ across cultural groups.

### Emotional Co-Regulation

So far, this section detailed the development of the *self*-regulation of emotions. However, emotion regulation can also be a social act in which people can regulate each other's emotions. In fact, this "co-regulation" is the basis of emotion regulation in infancy, when caregivers implement various techniques to calm or soothe their baby's distress (Morris, et al., 2018). As children mature into adulthood, their capacity for self-regulation increases but co-regulation never ceases to be important for well-being (Butler, 2011). By late adolescence, youth reciprocally engage in co-regulation efforts (e.g., social support) with family, friends, and romantic partners.

PSE-aged youth often seek out social support to help them deal with their emotions (Heiy & Cheavens, 2014), and use of this strategy also increases from adolescence into early adulthood (Zimmermann & Iwanski, 2014) and across the university experience (Park et al., 2020). With the arrival at post-secondary, many students will have moved away from previous co-regulation partners, opening opportunities to further develop their co-regulation skills with new partners. These new relationships may include peers or adult mentors (i.e., non-relatives), who can also be important for emotion regulation in emerging adults (Le et al., 2021).

For those that relocate to post-secondary, the digital age has increased access to co-regulation partners at home and elsewhere (Wei & Lo, 2006). Through text, social media, and video chat, youth living away from home

can more easily rely on their emotional support networks than previous generations were able to, having a positive impact on their well-being (e.g., Bardi & Brady, 2010). Unfortunately, this is an unexplored area, so it is not yet clear if digital opportunities have diminished the degree to which students develop new co-regulatory relationships or are better able to regulate due to an expanded network with a strong foundation. Fortunately, social support achieved through digital means is just as effective for emotion regulation as in-person support (Colasante et al., 2020). Thus, for current generations of youth, digital technology may be a valuable tool to extend and enhance emotion regulation capacities (Hollenstein & Faulkner, under review).

Developing competent emotion regulation skills is critical for psychosocial functioning in adulthood. Emotions and their co-regulation is an ongoing process in any close relationship. Thus, in the next section, we consider the developmental changes in the forms and functions of relationships across the university transition.

## Change in Relationships

### Parents and Caregivers

As youth take their first steps into post-secondary training, the parent-child relationship is transforming, driven by a confluence of developmental and contextual changes (Arnett 2004; Tanner, 2006). During this transition, as youth make a leap toward greater autonomy and independence, parents continue to play a vital role in providing support (Lowe & Dotterer, 2018; Wartman & Savage, 2008). Although some of this support is instrumental, such as financial assistance (Schoeni & Ross, 2005; Yelowitz, 2007), much of it can be emotional, including advice and comfort (Fingerman et al., 2009, 2010, 2016; Pizzolato & Hicklen, 2011). However, the nature of this support undergoes a gradual transformation due to the changing developmental needs of young adults (Harnett et al., 2012; Lowe & Dotterer, 2018).

The first year of post-secondary, in particular, becomes a key phase for renegotiating the parent-child relationship. As many students move away from their homes and immerse themselves in new social environments – including interactions with peers, professors, instructors, and academic administration and advisors – parental involvement often recedes (Harnett et al., 2012; Lowe & Dotterer, 2018). This adjustment aligns with the developmental progression of identity formation and emotion regulation described earlier, fostering their individuation from parents and integration within the novel campus setting.

This shift from a hierarchical (i.e., top-down parental control) toward a more horizontal parent-child relationship (i.e., reciprocity and mutual independence) is facilitated by no longer living under the same roof. For youth who attend PSE while still living at home, however, there is less room for forming new relationships outside of one's family unit and the need for autonomy can be more challenging to satisfy (Bradley-Geist & Olson-Buchanan, 2014). In either case, the negotiations for autonomy and recentering require both parent and child to develop new and better communication processes. Thus, this is a transition for parents as well as youth. Just as not all youth make a smooth transition into university, parents vary in how well they cope with distance, independence, and waning of their control (Baete Kenyon & Silverberg Koerner, 2009). For example, youth and parents can differ in their expectations for autonomy, with parents sometimes expecting more autonomy than their children (Collins et al., 1997). Hence, it is important to situate the challenges of students' adjustment as not being solely due to their own development.

In recent generations, advances of digital technologies have changed the nature of remote parent-student communication considerably. Audio and video calls, instant messaging, and social media platforms bridge geographical gaps, allowing youth to maintain close connections and support networks despite physical separation (Chen & Katz, 2009; George & Odgers, 2015). First year students often experience significant shifts in family dynamics and exhibit heightened contact frequency with family (Dorsch et al., 2016; Wolf et al., 2009), using digital devices as virtual tethers to maintain emotional closeness and promote higher levels of relationship satisfaction with parents (Chen & Katz, 2009; Gentzler et al., 2011; Gordon et al., 2007). Decades of research has shown that in contrast to difficult relationships, continued parental connectedness actually facilitates individuation and autonomy (Aquilino, 2006; Grotevant & Cooper, 1986). Whether this sustained digital connectivity with parents has the same effect is not yet clear.

*Peers*

Although parental relationships undergo a shift as mentioned above, close peer relationships are similarly transformed by the move to post-secondary (Swenson et al., 2008; Fraley & Davis, 1997). However, peer relationships may be even more important than parents for providing support to a student living away from home (Dennis et al., 2005). For instance, many students rely on each other when it comes to academic problems, supporting each other in their classes by forming study groups, understanding course concepts, or helping with assignments (Dennis et al., 2005; Richardson & Skinner, 1992). Additionally, peers become a pillar of support emotionally, offering compassion and understanding by experiencing the same challenges and demands associated with the transition to post-secondary (Dennis et al., 2005; Yazedjian et al., 2007). Thus, peers are able to offer support in ways that are unique from parents due to their shared circumstances.

Campuses also provide youth with rich opportunities to engage with individuals of diverse cultural, intellectual, and experiential backgrounds and build new social networks (Swenson et al., 2008). Engaging in such social interactions can help students adjust and feel connected with their university environment (Goguen et al., 2010; Tinto, 1998), as well as learn more about themselves and others (Crocetti et al., 2023). However, students are faced with a unique transitional challenge of navigating the maintenance of pre-existing peer relationships while also trying to form new connections (Benson, 2007; Swenson et al., 2008). Although pre-existing friendships offer familiarity and emotional support (Benson, 2007; Oswald & Clark, 2003), they can sometimes inhibit a new student's ability to feel attached and integrated with the new university environment (Benson, 2007; Goguen et al., 2010). Thus, as with parents, existing peer relationships also need recalibration to accommodate the changed circumstances.

Compared to peer relationships formed early in adolescence, PSE-aged youth form relationships more strongly based on shared academic interests and recreational activities (Swenson et al., 2008). In addition, relationships now form based on shared living spaces (i.e., roommates). The affordances of these situations increase the amount of time in contact with peers and the range of possible second-order relationships (e.g., roommate's friend). Thus, there is typically an increase in both the quantity and quality of relationships.

Digital technologies have also revolutionized peer relationships during the PSE period. Digital platforms like social media (e.g., TikTok, Instagram, Snapchat) and messaging apps (e.g., texting, Facebook messenger,

iMessage, Whatsapp) have become virtual bridges for both initiating new relationships, finding and engaging with communities, and maintaining connections across distances (George & Odgers, 2015). For those leaving home for school, they can stay in touch with old friends as social supports as well as form new bonds upon arriving to campus (Ellison et al., 2007; George & Odgers, 2015). For those who have opted to live at home, it allows them to stay engaged with the social happenings on campus and cultivate new connections.

In summary, the transition to post-secondary sparks significant shifts in both parent and peer relationships. As emerging adults tread the path of autonomy and increased responsibilities in this novel environment, the parent-child dynamic evolves into more adult-like interactions, challenging parents to balance support with newfound independence. Meanwhile, the university environment stimulates diverse peer connections, providing social and emotional support during this pivotal time.

## Conclusion

Although the majority of major developmental milestones emerge during the first two decades of life, at the start of their third decade youth are still transforming into the adults they will become. As students take steps toward future careers by engaging in post-secondary training, they are also human beings riding waves of biological, emotional, and social change. Despite being granted the civic rights and responsibilities of adulthood, the investment into youth in the modern era has extended this developmental period. Nonetheless, youth of today must still adapt and grow in the same ways that previous generations have by forming a coherent identity, mastering emotions, and initiating and maintaining supportive relationships. The PSE environment is a rich and fertile soil for these normative developmental processes to unfold.

It is our hope that faculty, staff and administration can adapt their policies and responses to students through the normative developmental understanding we have outlined. This includes being sensitive to age related capacities and the conditions under which youth thrive and grow. For example, it has been difficult for the older generations which comprise the majority of faculty, staff, and administrative positions to understand the ways in which youth use digital technologies. By understanding that, at least in part, these tools are serving important functions for their intra- and inter-personal needs (e.g., identity exploration, social connection and support), it may be easier to identify and address concerning situations. Furthermore, by understanding the timing and form of universal developmental change, it may be possible to improve structures and supports for youth of varied cultural backgrounds. Although there are myriad ways that youth behaviours and interests can manifest in the PSE environment that need thoughtful consideration, at their core all youth are traversing the same developmental journey as they mature.

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## Promoting Post-secondary Student Well-Being

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## Introduction

Mental health has immense impacts on educational outcomes among post-secondary students. Adjustment problems, trouble coping with stress, supporting loved ones, symptoms of mental illnesses: these experiences, and many others, are part of what students bring with them to the classroom. Promoting student well-being and reducing the impact of mental health challenges on learning is part of effective pedagogy. However, addressing student mental health deliberately and directly may feel daunting.

In this chapter, we first describe why instructors should consider student mental health in course design and delivery. We then spotlight three actionable issues where instructors can make small adjustments that can have positive impacts for some students' learning, attitudes towards education, and overall well-being. To facilitate the adoption of best practices, we provide concrete examples and directions. We close with suggestions for how instructors can develop and curate lists of mental health resources to support their students.

This chapter is **not** a "one stop shop"; we only skim the surface of how instructors can use techniques that promote well-being to improve students' learning experiences. But there is great benefit in starting somewhere, and this is a good place.

## A Global Perspective on Post-Secondary Student Mental Health

The World Mental Health International College Student (WMH-ICS) survey initiative was launched by the World Health Organization (WHO) in 2014. The initial round of surveys was completed by more than 14,000 students in 19 post-secondary institutions spread across 8 countries (for a detailed description, see Cuijpers et al., 2019). The WMH-ICS has generated reliable information on the prevalence and consequences of mental health problems among post-secondary students.

The WMH-ICS unequivocally demonstrated that mental disorders are common among post-secondary students. Approximately 35% of first-year students met criteria for a lifetime mental disorder according to the Diagnostic and Statistical Mental Disorders – 4th edition (DSM-IV-TR; American Psychiatric Association, 2000) criteria. Further, approximately 89% of lifetime cases were present in the year before students began their degree programs (Auerbach et al., 2018). Coping with mental health symptoms takes a toll on students' functioning: it is related to disability and role impairment (Wilks et al., 2020). In addition, nearly one-third of first-year students report having had thoughts of suicide, and 4.3% have a history of one (or more) suicide attempts (Mortier et al., 2018). Lifetime nonsuicidal self-injury (NSSI) is endorsed by over one-fifth (22.8%) and increases the odds of subsequent suicidal behaviour (Kiekens et al., 2018). Taken together, symptoms of mental illness are common among post-secondary students, and they often first emerge before students begin their studies.

Lifetime mental health problems have a well-documented impact on post-secondary performance. Pre-matriculation-onset mental disorders are significantly associated with (a) lower odds of completing post-secondary degrees and (b) higher odds of terminating studies before degree completion (attrition) (Auerbach et al., 2016). At a more micro level, recent mental health problems are estimated to lead to a 2.9-4.7% reduction in academic year percentage (0.2-0.3 Grade Point Average [GPA] points) in first year post-secondary students (Bruffaerts et al., 2018). For those who report prior suicidal thoughts and/or behaviours, the deleterious impacts on GPA (Mortier et al., 2015) and likelihood of graduation (Mortier et al., 2018) may be even greater. These striking statistics point to a clear avenue for improving learning experiences for post-secondary students: pedagogical practices that promote positive mental health will enhance students' learning, and their learning attitudes.

## Teaching Difficult Content: Challenges and Learning Opportunities

Interacting with content that we find upsetting is an inevitable hazard of learning. Sometimes, what upsets or even distresses us is also what moves and inspires us; for some, the seeds of lifetime endeavors (e.g., careers) are sown from things that are initially upsetting. As educators, we do not want to censor critical, learning-outcome-relevant content because we anticipate it being provocative.

Instructors are also charged with creating and maintaining safe learning environments wherein students can interact with course content productively. When we ask students to engage with difficult content, it is therefore necessary to have thoughtful supports in place. "Difficult content" sounds abstract, but it is easy to think of examples that would be relevant to coursework across academic disciplines. Post-secondary students will read about war, violence, individuals, and groups experiencing trauma, as well as (or in addition to) the consequences of structural racism, misogyny, and other expressions of hate. These are just some examples. As students bring unique experiences and personal contexts to the classroom, the list of course content that could evoke strong feelings or reactions is endless (see Stewart & Milanovic, 2019, for additional discussion).

Our conceptualization of "difficult" class content in the context of student experience overlaps conceptually with *Trauma-Informed Care.* Trauma-informed care is an approach to patient care that is taught in medicine and related clinical fields. A key feature of this approach is that it realizes the widespread impact of trauma (broadly defined) on symptoms and functioning and recognizes the variability in potential paths from traumatic experiences to what is happening in the "here and now" (Substance Abuse and Mental Health Services

Administration, 2014). As in Trauma-Informed Care, it is important for instructors to acknowledge the connections between students' prior experience and classroom content, and, as much as possible, to structure courses through that understanding.

### Content Warnings

Using trigger or content warnings is a well-meaning but fundamentally flawed approach for handling difficult topics in post-secondary instruction. In an educational context, content warnings are advanced notifications about course content (e.g., readings, videos, lectures, discussions) that may be tied to students' past negative experiences, or that may otherwise be upsetting. The intention of content warnings is to help students steel themselves for the material, or to provide an opportunity to avoid it entirely. Many instructors use content warnings believing that they will create safe learning environments and help students benefit from course content.

Unfortunately, content warnings do not work. In experimental studies, content warnings do not make participants feel more prepared to view difficult content (Bridgland et al., 2022) and they increase anticipatory anxiety, rather than providing intended emotional effects (Bridgland et al., 2019). Content warnings have no impact on reactions following the presentation of target content, nor on participants' coping abilities (Bridgland et al., 2023; Sanson et al., 2019). Content warnings are designed to protect and support student mental health but may do the opposite.

Germane to instructional settings, content warnings also do not have beneficial effects on learning or understanding difficult material. For instance, when people view art depicting scenes that could putatively cause distress, content warnings (a) increase negative emotional reactions and decrease positive emotional reactions; and (b) reduce all aspects of aesthetic appreciation of the target pieces (Jones et al., 2023). Participants draw less meaning from, and make fewer interpretations of, the art in question. Overall, content warnings are not useful or appropriate pedagogical tools for instructors who teach difficult content.

One of our chief concerns about content warnings is that instructors may mentally waive responsibility for supporting their students as they learn about difficult content. Indirectly, content warnings may impede pedagogical techniques that enhance student engagement and learning, and that have the potential to move well-being in a positive direction. Relatedly, others have noted that content warnings may encourage inappropriate avoidance of certain types of information; people miss the opportunity to learn they can cope and interact productively with the content, which reinforces future avoidance (e.g., Gainsburg & Earl, 2018; McNally, 2014). We next present general course design choices and instructor-level considerations to use instead of content warnings.

### Alternatives to Content Warnings: Course Design

Instructors should focus on design choices that maximize student agency and autonomy around difficult content. For example, sexual assault survivors feel most supported by representatives of post-secondary institutions when they use empowering language: support that unequivocally acknowledges negative impact of the assault and gives the survivor support in choosing courses of action (Bedera, 2021; Holland & Bedera, 2020). A straightforward way to empower students around difficult content is to provide lesson-by-lesson content

details in the syllabus and/or overviews of lesson plans before classes. Instructors may then encourage students to look ahead and identify topics that could be difficult to learn about because of prior negative experiences. Further, educators can make themselves and/or other teaching staff available to answer questions about how the content will be dealt with, and, assuming instructor comfort, to problem-solve around any perceived barriers to learning. This approach does not patronize students, nor does it assume that "one-size-fits-all" when it comes to potentially upsetting or distressing course content. Instead, students are given more control, and the opportunity to reflect on what they need to benefit from lessons and assigned course content (Stewart & Milanovic, 2019).

The recommendations above are most effective when instructors take proactive steps to support those with past negative experiences that could be activated by course content. A general acknowledgement (e.g., in the course syllabus) of students' lived experiences demonstrates that an instructor is (a) aware that course content can be distressing, (b) that students have diverse negative experiences that can be activated by course content and (c) will center or at least incorporate these experiences in course content. Ideally, this is reinforced with instructor-directed exercises to create a safe and supportive class climate.

To facilitate students' autonomy, educators can curate a list of mental health resources for students. Optimally, the list includes general options, as well as resources more tailored to course content. For a course focused on self-injurious behaviours, for instance, instructors can provide suicide-focused websites, self-paced cellphone apps, text/phone hotlines, and specialized mental health services for students in the class (available [here](#)). Resource curation includes when each option is best used (e.g., in an urgent crisis), how to practically access them, and how to get more information to inform decision-making. Providing this information increases the chances that these resources are used when needed and reduces the considerable mental health burden of *accessing* help. For further discussions of using course design to improve instruction of difficult content, see Bedera (2021) and Stewart and Milanovic (2019).

### Alternatives to Content Warnings: Instructor Considerations

Acknowledging lived experiences and empowering students increases the likelihood that they will share the (negative) experiences that connect with course content. Instructors thus are responsible for reflecting on how they would respond to student disclosures (e.g., firsthand trauma experiences) and ensuring they are sufficiently knowledgeable. Responses that (unintentionally) minimize lived experiences or that are otherwise inadequate can lead to experiences of *institutional betrayal* (i.e., a worsening of traumatic experiences due to institutional actions or inaction; Smith & Freyd, 2014). Acknowledging and allotting time for student's disclosures typically goes a long way; giving lived experiences "airtime" in class communicates their importance and empowers students as experts on their circumstances (Bedera, 2021). Critically, educators are entitled to their own individual level of comfort with having students share their connections to difficult content in class. The key is clearly communicating limits – what an instructor is and is not prepared to support – in the context of a student-centered commitment to connecting students with resources or outlets to share their experiences.

Instructors must prepare for the rare cases where students voice unhelpful or hateful attitudes related to course content. For example, students might (purposefully or inadvertently) express victim-blaming or pro-violence attitudes. The educator's priority is avoiding institutional betrayal; inaction in the face of comments that may be harmful to students can seem like instructor endorsement. Instructors should build an evidence-

based response that debunks the misunderstandings that often underlie unhelpful attitudes that might be expressed in class. This has the dual benefit of keeping discussions on track (grounded in the material) and supporting students with lived experience by distancing the instructor from the unhelpful attitude.

Effectively teaching difficult content demands that educators "don [their] own oxygen mask before assisting others." Instructors who prioritize their own well-being and work to combat burnout will be most effective at promoting student mental health. For example, we have used resources directed at people who care for individuals who experience suicidal thoughts ([www.suicideisdifferent.org](www.suicideisdifferent.org)). Among their many benefits, these resources have helped with categorizing effective strategies by function (e.g., immediate coping; routine upkeep during the semester). Bedera (2021) provides more examples of habits to consider while teaching difficult content. Although exact approaches to self-care will vary, an instructor should conduct routine "audits" of their own relationship with the difficult content they instruct, knowing that their appraisals and reactions will necessarily transact with their teaching experiences year over year.

## Creating a Supportive Class Climate

Class climate can drastically alter students' overall experience in a course. Enhancing how students perceive their learning environment and their ability to navigate barriers (e.g., mental health challenges) facilitates learning and academic persistence (Slavich & Zimbardo, 2012). Therefore, it is imperative that instructors are thoughtful about how their class climate is established and sustained to increase the likelihood of student success.

### Syllabi

A course syllabus is often available to students before the start of classes and is a key tool for establishing class climate. A warm-toned syllabus that acknowledges the importance of mental health can result in instructors being perceived as more approachable (Gurung & Galardi, 2022; Waggoner Denton & Veloso, 2018); approachability is a trait that students value. When students feel that they can approach instructors when facing obstacles, it increases the likelihood of them disclosing barriers to learning, which in turn allows instructors to assist in a mental health promoting manner when possible (Meluch & Starcher, 2020).

Syllabi are also a place to first address values related to equity, diversity, and inclusion (EDI). Minoritized groups may face additional challenges in postsecondary settings (e.g., discrimination) and can feel that they are unable to seek support (Arday, 2018). Adding a *personalized* statement of commitment to EDI (avoid, or at least add to, generic language) in the syllabus would demonstrate that *all* students' safety and comfort is important. This practice can help marginalized students feel more welcomed. For guidance on how this can be accomplished, see Cornell University's Center for Teaching Innovation (n.d.) and Fuentes and colleagues (2021). Notably, it is important to act in accordance with what is being communicated to students regarding EDI and address behaviours in the class that deviate from it.

### First Class

The syllabus can set the tone for class climate development, but more work must follow. In the first class

especially, instructors should discuss the importance of mental and emotional well-being, and outline steps that can be taken should anyone need support throughout the semester (e.g., talking to the instructor or referring to resources in the syllabus). If educators do not feel comfortable engaging in these conversations, simply acknowledging that barriers may arise during the semester is beneficial to students. Instructors are in a position where they can promote student learning and personal growth (Slavich & Zimbardo, 2012). By engaging in these discussions, instructors are normalizing talking about mental health which can combat both public and self-stigma which are both barriers to the disclosure of mental health difficulties and accessing support (Perry et al., 2014).

*Student Input*

Students should be permitted to provide input about what they need to feel supported in educational settings. Allowing students to contribute to a shared vision of the class climate increases the chances that students will adopt and act in accordance with this vision (Slavich & Zimbardo, 2012). The needs of students will vary from class to class. For instance, the type of support required for a course on race and racialization may be different from a course on molecular biochemistry; the former may address topics that could evoke strong emotional responses from students due to personal experiences based on their racial identity. With that said, instructors should not assume that mental health is irrelevant in any course. Students come from diverse backgrounds and may have different relationships with course content that may not be obvious to the instructor. It is therefore critical to take into consideration feedback and suggestions from students to ensure that the climate that is being created fits their needs.

*Class Size*

No matter the class size, the recommendations outlined throughout this chapter can contribute to a more positive learning environment for students. However, smaller courses (e.g., seminars where enrolment might be 1-2 dozen students) present a unique opportunity to create a more personalized class climate. Seminars can allow for more back-and-forth discussions amongst students and instructors that can generate a clearer consensus regarding the class's expectations and needs. For example, in a seminar that one of the authors attended, the instructor used a *Google Jamboard* to solicit and summarize students' expectations for themselves, their peers, and their instructor when it came to creating and maintaining a supportive class environment. This anonymous exercise aided in the development of class norms as it generated a discussion on appropriate behaviours for the seminar.

In smaller courses, it is also potentially easier for instructors to foster stronger bonds with students. The strength of an instructor-student relationship influences the likelihood of students sharing when they are struggling (Fulginiti et al., 2015). Consequently, stronger relationships can promote more open communication regarding mental health and other obstacles that students may face throughout the semester which further emphasizes a supportive class climate for the students. With that said, tweaks to the delivery of large survey courses can make disarmingly significant differences to student experiences. For example, instructors can make use of free online polling software (e.g., Mentimeter; available [here](#)) to rapidly check in on class climate, and to normalize times of heightened stress/distress throughout the term. We have used techniques like generating real-time word clouds from student responses to stem questions about their mental health, specifically, or their experiences with their coursework in general. Instructors can use brief polls as a launching off point to solicit

individual student comments, or as a simple visual reminder of shared experiences (e.g., that many in the class are experiencing ups and downs; that others share the feeling of being overwhelmed in the course).

### Sustained Effort

After setting norms for the class from the outset, it is important to reinforce key elements that promote a positive class climate. Making statements throughout the semester signaling support for students' mental health validates the difficulties that students may be experiencing (Coleman, 2022). This can be especially impactful during times, like exam season, when students experience more stress, or following critical local or geopolitical events (e.g., a student suicide on campus). For example, saying something like "*I know this is a stressful time, so I wanted to remind you that you can come to me with any worries about coursework or if you need someone to talk to. There are also resources provided in the course syllabus that I encourage you to access should you need them.*" Instructors are not expected to act as therapists, nor should they. Oftentimes, students are seeking guidance on how they can better support themselves. Instead, the instructor can act more as a gatekeeper or facilitator; being knowledgeable about resources available to students and, if possible, having some guidance for how to efficiently get connected with available resources can save students considerable time and hassle. Frustration with access to mental health resources has, for many, a noxious effect on well-being.

Prioritizing class climate also includes responding to behaviours that do not align with the values and needs that student established in the first few classes. By making a sustained effort, it demonstrates that an educator is not paying lip service to student mental health and validates those who may be struggling. Further, the instructor models behaviours that aligns with the students' expectations of the class climate and generally fosters a positive learning environment.

Creating a supportive class climate requires active communication, collaboration, and ongoing commitment. As the saying goes, "a little can go a long way." Instructors play a fundamental role in modelling normative attitudes and behaviours for their course. By embracing these practices, instructors can foster a positive learning environment that empowers students to succeed on an academic and personal level.

## Helping Students Manage Stress

Post-secondary students routinely weather stressful experiences, including the explicit and continual evaluation of academic performance. Stress can be adaptive because it allows us to navigate situations that are challenging, unpredictable, or dangerous (Starcke & Brande, 2016). In fact, some research suggests that stress can promote motivation and goal attainment, thus contributing to positive learning outcomes (Rudland et al., 2019). However, stress can also have major consequences for mental well-being and academic achievement when effective coping resources are not available (Ellis & Giudice, 2014; Pascoe et al., 2019). Among other effects, stress can be detrimental to tasks that require executive functions (Starcke & Brand, 2016). Executive function skills allow us to monitor and control our behaviour (Shields et al., 2016). Some of the core processes subsumed under the umbrella of executive functioning are goal setting, maintaining focus, and inhibiting impulses (Shields et al., 2016). In high stress environments, our capacity to engage in executive functions becomes impaired (Shields et al., 2016; Starcke & Brand, 2016). Not only are these abilities essential for navigating everyday life, but they are necessary for optimal learning.

### Flexible Course Design

Instructors can mitigate the negative impacts of stress on learning through careful curriculum design. Specifically, courses can be structured in a format that is conducive to stress management. Not only does this practice promote higher academic achievement but designing "stress-friendly" courses is also related to positive mental health outcomes for students (Capp, 2017). Grounded in universal design principles, the practice of incorporating flexibility into postsecondary course structure is a popular and evidence-based strategy for alleviating student stress (Fornauf & Erickson, 2020). One well known example of flexible design is the "Universal Design for Learning" (UDL) model.

The UDL highlights how adapting elements of more traditional course design to be considerate to variability in students' learning needs and contexts can bolster student success and well-being in the classroom (Kennette et al., 2019). The core assumption of UDL is that the structure of environments should maximize accessibility and comprehension to the widest audience possible (Dolph, 2021; Kennette et al., 2019). Research indicates that the UDL model helps with managing student stress (Fornauf & Erickson, 2020). Specifically, UDL designs purport to minimize stress that students experience when there is a misfit between course structure and their learning needs, or when unnecessary rigidity in a course compromises the accessibility of learning experiences.

Instructors should apply several key aspects of flexible design to their courses to improve learning. For example, flexible design may involve presenting core concepts in multiple formats and allowing students to demonstrate their knowledge through multiple avenues (Capp, 2017). For instance, a flexibly designed course could include options for students to demonstrate their learning either through a standard essay-style assignment, *or* a creative, nontraditional product (e.g., a blog post). Increasing student agency is associated with academic and mental health benefits (Capp, 2017). Giving students choices where possible can generate learning environments where students feel they are capitalizing on their learning strengths to meet course demands. Choices may also allow students to capitalize on their learning strengths which generates positive emotions and enhances the efficiency of cognitive processes related to learning (Fredrickson, 2001; Fredrickson et al., 2005).

Flexible deadlines are another structural component of flexibly designed courses. The traditional approach is for deadlines to be rigid, and to penalize students for not meeting them. Alternatively, some instructors use "grace periods" in their courses. Grace periods typically mean that an assignment may be due on a certain day but has a "built-in" extension (e.g., three additional days). One benefit of the additional time is students have some control over how they organize their time and when they hand in the assignment. Students can use their discretion to either submit the assignment by the first deadline, or within the grace period if needed. Again, allowing students to have control of their learning pace is how flexible design may reduce student stress levels and improve learning outcomes.

### Considerations for Flexible Course Design

Eliminating guidelines and deadlines can have unintended negative consequences. Excessive flexibility embedded in a course structure may promote a tendency to put off assignments. Procrastination – the act of delaying one's intended course of action in a manner that is voluntary, yet irrational – has many consequences for students (Sirois, 2023; Zhang et al., 2019). Specifically, procrastination is strongly associated with more perceived stress and lower academic achievement. It is also quite common: an estimated 50-75%

of postsecondary students engage in moderate to severe procrastination (Miyake & Kane, 2022; Steel, 2007). Unfortunately, putting off schoolwork often compromises the quality of the student's performance and results in less learning (Rabin et al., 2010). Procrastination is also related to several negative mental health outcomes, including low self-esteem, anxiety, and depression (Kim & Seo, 2015; Rabin et al., 2010).

Given the consequences of procrastination, instructors should design courses that limit the use of this strategy and/or mitigate its impacts. Critics of flexible deadlines claim that affording "too much" flexibility in course structure can amplify procrastination. Lenient deadlines allow students to delay the completion of assignments for longer (i.e., past the initial deadline and into the grace period). Flexible course design aims to reduce student stress, but in some applications, it can increase procrastination and accompanying negative impacts on student mental health.

Courses should include elements of compassion and flexibility to alleviate some academic-related stress, while maintaining enough structure to prevent academic procrastination. Instructors can separate a large assignment into several smaller submissions throughout the term. For instance, students could first be evaluated on an essay outline, then use that feedback to compose their final paper. Research shows that separating information into smaller sections – a practice known as "chunking" – is advantageous for memory and learning (Thalmann et al., 2019). A series of smaller submissions also seems less daunting to students than a heavily weighted final assignment and can thus benefit stress management.

In line with flexible design, structured submissions can have built-in grace periods to allow for student agency throughout the term. To strive for a balance between flexibility and structure, instructors should ensure these grace periods are a reasonable length (i.e., two to three days after the initial deadline). Shorter grace periods are favorable; using grace periods that are multiple weeks, or removing deadlines altogether, can lead to procrastination and other negative consequences (Hills, 2022).

Educators should implement short and consistent automatic grace periods for numerous small assignments throughout the semester. In this format, there is sufficient rigidity to keep students on track while affording agency that reduces stress levels. Optimizing student wellbeing and cognitive ability requires balance. When it comes to deadlines and assignment submission, expectations should be communicated clearly in both an introduction at the beginning of the course and throughout the term (Moscardo, 2009). By deciding to structure courses that balance agency and structure, educators can cultivate positive impacts for their students' mental well-being.

## Developing and Curating Resources to Support Student Well-Being

Choosing among strategies, recommendations, and tools for supporting student well-being and determining how to get them to post-secondary students is challenging. We provide some general recommendations that may be helpful for curating mental health resources as well as an example at the end of the chapter (see Table 1).

Ideally, any instructor-level efforts to promote student mental health in the classroom occur in the context of a broader institutional commitment to student well-being. Well-staffed and funded student counseling

services, centers devoted to assessing learning needs and disabilities to identify appropriate accommodations, and in-house medical services that include psychiatry are important components of overall mental health supports for students in higher education. In addition, instructors can support students in the classroom by preparing to confidently respond (if appropriate) when student mental health concerns impact learning. However, instructors vary in their levels of comfort when addressing students' mental health (White & LaBelle, 2019) and some feel they are not appropriately trained in this area (Lipson et al., 2021). Institutions can provide basic mental health training to faculty and staff to alleviate some of these concerns. Another option is for educators to seek out training to increase their mental health literacy, which may enhance their effectiveness in promoting student mental health. For example, Queen's University's Human Rights and Equity Office developed a series of modules that all students, staff, and faculty are encouraged to take (see https://www.queensu.ca/hreo/education). As instructors build their knowledge, seeking support from colleagues – particularly those whose scholarship focuses on mental health – is a supplemental option. Instructors do not need to be mental health specialists; preparation and planning should fit the issues that may arise given the course content and instructor comfort. It would also be beneficial for institutions to have a mental health support structure in place for educators and staff should they need support after talking with students. People are in a much better place to support others when they themselves feel properly supported.

Many resources are available to students through their institutions (e.g., student wellness services and peer support programs) or online (e.g., crisis lines and websites). However, students often do not know all the resources that are available to them and how to access them. The vast choice can be overwhelming, and not knowing where to start can create a barrier to seeking support. Further, students in distress may be less willing or capable of searching for appropriate support. By creating a resource list for students that is easily accessible, instructors can offset this extra burden.

Throughout the semester, academic demands and stress levels fluctuate. Therefore, posting resource lists in course syllabi and on course webpages helps make these accessible for the semester or term. Resource lists should include information on the resource's address (if applicable), link/URLs if it is an online resource, contact information, hours of operations, and any potential costs associated with the service (Coleman, 2022). For students attending courses on campus, instructors should include in-person, institutional resources (e.g., student wellness). However, in online or hybrid courses, many students may not have access to these services. Therefore, offering a mix of in-person and online resources is most helpful. Overall, inclusivity is a key to maximizing well-being for as many students as possible.

Instructors should also carefully consider the content and type of resources they curate. For example, sexual violence is common in post-secondary institutions (Howard et al., 2019) and students may benefit from the inclusion of resources specific to this experience. Additionally, students from diverse backgrounds may encounter entirely different stressors. For example, transgender students may have trans-specific experiences that contribute to poor mental health outcomes (e.g., poor reactions to coming out; Gnan et al., 2018). Feelings of alienation can be exacerbated when seeking support from resources that are not gender-affirming or relevant for trans folks (Goldberg et al., 2019). Therefore, to ensure that students from diverse backgrounds are adequately supported, instructors should include resources designed for specific experiences and identities.

## Concluding Remarks

Mental well-being and learning are inextricably entwined. We discussed three ways that instructors can promote student well-being including presenting difficult content more effectively, fostering a supportive class climate, and using flexible course design principles to help students thrive in the face of stress. We concluded with suggestions for how to help students attain additional resources that support mental well-being. We hope this information is a useful starting point for instructors and administrators to engage in practices that enhance learning by attending to student mental health.

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## Table 1

**Free Mental Health Resources List for Students**

| RESOURCE: | AVAILABLE: | LINK/LOCATION: |
| --- | --- | --- |
| **Helplines** | | |
| **Good2Talk** | 24/7 | Website: https://good2talk.ca/ <br><br> Phone: 1-866-925-5454 |
| **Wellness Together Canada Crisis Line** | 24/7 | Website: https://ca.portal.gs/ <br><br> Adults → Text: 741741 <br><br> Youth → Text: 686868 |
| **Crisis Services Canada** | Calling: 24/7 <br><br> Texting: 4:00 PM – 12:00 AM EST | Call: 1-833-456-4566 <br><br> Text: 45645 |
| **Resources for Support & Coping with Stress** | | |
| **MindShift® CBT** | Mobile app: 24/7 | Website: https://www.anxietycanada.com/resources/mindshift-cbt/ <br><br> Apple: https://apps.apple.com/us/app/breathe2relax/id425720246 <br><br> Android: https://play.google.com/store/apps/details?id=org.t2health.breathe2relax&hl=en_CA&gl=US |
| **Breathe 2 Relax** | Mobile app: 24/7 | Apple: https://apps.apple.com/us/app/breathe2relax/id425720246 <br><br> Android: https://play.google.com/store/apps/details?id=org.t2health.breathe2relax&hl=en_CA&gl=US |
| **Wellness Together Canada – Website** | 24/7 | https://www.wellnesstogether.ca/en-CA |
| **Befrienders** | 24/7 | https://www.befrienders.org |

| Resource | Availability | Contact |
| --- | --- | --- |
| **Self-Compassion** | Website: 24/7 | https://self-compassion.org/ |
| **Self-Injury Outreach & Support** | Website: 24/7 | https://sioutreach.org/ |
| **BIPOC Specific Resources** | | |
| **The Safe Place** | Mobile app: 24/7 | Apple: https://apps.apple.com/ca/app/the-safe-place/id1349460763<br><br>Android: https://play.google.com/store/apps/details?id=com.he6ecb72aef1&hl=en_CA&gl=US&pli=1 |
| **Decolonizing Therapy** | Website: 24/7 | https://linktr.ee/decolonizingtherapy |
| **We R Native** | Website: 24/7 | https://www.wernative.org/ |
| **Talk 4 Healing** | 24/7 | Online chat: https://www.talk4healing.com/<br><br>Phone (call or text): 1-855-554-HEAL |
| **Hope for Wellness Help Line**<br>*Available in English, French, Ojibway, Cree, and Inuktitut* | Phone and chat: 24/7 | Online Chat: https://www.hopeforwellness.ca/<br><br>Phone: 1-855-242-3310 |
| **2S-LGBTQIA+ Specific Resources** | | |
| **PFlag Canada** | Website: 24/7 | https://pflagcanada.ca/ |
| **Trans Lifeline** | 24/7 | Call: 1-866-488-7386 |
| **LGBT Youthline** (age 16-29) | Sunday to Friday, 4:00 PM – 9:30 PM EST | Call: 1-800-268-9688<br><br>Text: 647-694-4275<br><br>Live Chat: youthline.ca |

| Resource | Hours | Contact |
| --- | --- | --- |
| **The Trevor Project** | 24/7 | Website: https://www.thetrevorproject.org/<br>Call: 1-866-488-7386<br>Text: "START" to 678 678 |
| **On-Campus & Local Resources** (A sample resource list for Queen's University/Kingston ON) | | |
| **Queen's University Student Wellness Service** | Monday to Friday, 9:00 AM – 4:30 PM EST | Call: 613-533-2506<br>Website: http://www.queensu.ca/studentwellness/counselling-services |
| **Telephone Aid Line Kingston (TALK)** | 7 days a week, 6:00 PM – 2 AM EST | Call: 613-544-1771 |
| **Kingston Frontenac Lennox & Addington Addiction and Mental Health Services** | 24/7 | Call: 613-0544-4229 |
| **Sexual Assault Centre Kingston Crisis and Support Line** | 24/7 | Call: 613-544-6424 or 1-877-544-6424<br>Text: 613-544-6424 (available 7 days a week, 12:00 PM – 12:00 AM EST) |
| **Peer Support Centre (Queen's University)** | Tuesday, Wednesdays, and Thursdays: 2:00 PM – 4:00 PM EST | Call: 613-533-6000 ext. 75111<br>Email: peersupport@ams.queensu.ca<br>Visit in-person: Rideau Building, Rooms 202, 203, and 204 |

## How to Cite

## About the authors



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Ashley Filion (she/her/hers) received a Bachelor of Science (Honours) degree from Queen's University and is pursuing a Master of Public Health. She is dedicated to advocating for evidence-based practices to improve the well-being of people in the community. Her interests include enhancing inpatient mental health treatment and understanding the development of suicidal thoughts and behaviours.

Ella Blondin



Ella Blondin (she/her/hers) holds a bachelor's degree in psychology from Queen's University and is passionate about mental health advocacy and promotion. She worked as a researcher for PREVNet (Promoting Relationships and Eliminating Violence Network) and supported national health research efforts including the Health-Behaviours in School-Aged Children (HBSC) Study. Ella is dedicated to knowledge mobilization and using research to enhance and expand accessibility to mental health services across Canada.

Jeremy Stewart



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Tom Brophy

# Campus Mental Health: A Whole Community Responsibility

Tom Brophy[1], Tamara Leary[2], and Rick Ezekiel[3]

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## Introduction

The post-secondary ecosystem consists of a variety of inter-related but unique populations including, but not limited to, students, faculty, and staff. The awareness of and sensitivity to mental health as a topic is becoming more of a priority in the post-secondary environment. Banning's (1974) groundbreaking model identified the importance in the collective ecological system in ensuring and supporting the success of the developing student. Such a model aligns well with the Socio-Ecological Model for Health promotion and the inter-relationship between the student, interpersonal, institutional and community level (Lisnyj et al., 2021). The communication interplay between these elements is critical in understanding the post-secondary environment and how they interrelate to shape the student experience and the overall mental health of the institution.

The National Standard for Psychological Health in the workplace from the Mental Health Commission of Canada offers public and private organizations a framework to develop and implement the tools and resources necessary to promote the psychological wellbeing of employees. This Standard extends higher education institutions' attention on mental health and wellness beyond students to include staff, faculty, and community members. A holistic approach in the development and provision of mental health services and supports is promoted by governments and agencies such as the Canadian Mental Health Association, the Canadian Association for College and University Student Services, and the 2015 Okanogan Charter (Di Placito-De Rango, 2018) and requires collaboration and cooperation between faculty and staff (Margrove et al., 2014).

This chapter is written by a faculty member and two senior university administrators (who are also sessional instructors) with each author sharing their perspective on, and experiences with, the present-day realities of mental health and wellbeing for students, faculty and staff.

## Post-secondary Student Mental Health in 2023: Where are we, and where do we go next?

Student mental health has been a priority within post-secondary institutions, and among mental health experts over the past two decades. Since 1998, it was clear that post-secondary students report elevated psychological distress at significantly greater rates, with 41.1% of students in an Ontario sample demonstrating elevated distress on the general health questionnaire (GHQ-12), compared to 22.8% of individuals in a sample of the general population of adults aged 19-25 (Adlaf et al., 2001 ). This trend has continued and expanded over time. Canada has seen positive gains in post-secondary education participation, with 73% of Canadians aged 25-34 having a post-secondary credential in 2019 compared to 59% in 2000. There remains a disparity in access to post-secondary education by family socioeconomic status (Frenette & Zeman, 2021). Forty-nine percent of Canadians aged 19-23 whose parents did not hold a high-school diploma accessed post-secondary education, compared to 75% of those who has at least one parent with a post-secondary education, with disparities emerging by income as well (Statistics Canada, 2021). Significant efforts have been made to foster greater participation and inclusion in post-secondary education for Indigenous students, racialized students, and traditionally underrepresented groups including single parents and mature students. Barriers to access among these communities also frequently occur through socioeconomic mechanisms and broader systemic barriers within our societies. Further, it is imperative to recognize that mental health services and systems and structures within post-secondary environments must evolve to meet the goals and needs, as our learners become ever more diverse.

Youth with a mental health condition or disability are significantly less likely to enroll in post-secondary education. In 2000-2001, 60% of youth with a diagnosed neurodevelopmental condition and 48% of youth with a mental health condition enrolled in post-secondary education, in comparison to 77% of youth in the broader population (Arim & Frenette, 2019). The number of post-secondary students with disabilities, notably neurodevelopmental (particularly learning) and mental health conditions, has increased significantly over the past 30 years, potentially signalling improvement in access and participation and reduction in disability-related disparities (Sukhai et al., 2018 ). However, it is also important to note that the general incidence rate of youth with a diagnosed learning or mental health condition also increased significantly during this same period, yet there was not a significant change in the proportion of post-secondary students with sensory or physical disabilities. From 2013-2019, the proportion of post-secondary students reporting symptoms of psychological distress, including self-harm, suicidal ideation, and suicide attempts significantly increased (Linden et al., 2021 ). Academic stress remains the most reported stressor over time within the National College Health Assessment, Canadian reference group (American College Health Association, 2022).

Future trends in post-secondary student mental health are likely to be impacted by gaps in academic and social-emotional learning emerging during and following COVID-19-related school closures. Early indicators signal the greatest learning losses and disruptions to healthy child development occurred among youth from lower socioeconomic backgrounds, Indigenous and racialized youth, and students with disabilities (Gallagher-Mackay et al., 2021). Additionally, Canadian students in grades 4-12 who learned primarily online during the COVID-19 pandemic self-reported lower rates of mattering in their school environments, linked to important concepts such as academic engagement and sense of belonging. Sense of belonging and mattering are drivers of academic performance and social emotional learning, and it is reasonable to expect downstream effects of

these phenomena on post-secondary student engagement and well-being (Vaillancourt et al., 2022).  Students who were in grade one in 2020 would begin entering post-secondary education in 2032. This signals that we will have both the challenge and opportunity in post-secondary education to effectively support students who have experienced educational, social, and emotional developmental impacts of the pandemic as they enter post-secondary education over the decade ahead (Gallagher-Mackay et al., 2021).

Several indicators point to increases in reporting of psychological distress and demands for mental health services within post-secondary education in Canada. At the same time, trends point to increases in post-secondary education participation among youth from lower socioeconomic backgrounds, historically underrepresented and excluded sociodemographic groups, and those with pre-existing neurodevelopmental and mental health conditions. At least partially, we see some of these trends as positive indicators of greater access and inclusion in post-secondary education. As the make-up of students accessing post-secondary education evolves, and we grapple with our opportunities to support students whose learning and development was impacted by the COVID-19 pandemic, so must our institutional services and educational conditions to promote student well-being and success.

In 2020, the Psychological Standard for Post-secondary Student Mental Health and Wellbeing was published and offers a tool to align efforts to enhance student mental health at a whole-of-institution level (Mental Health Commission of Canada, 2020). The Standard utilizes a socio-ecological model to consider the multi-level efforts institutions should consider when developing a comprehensive mental health strategy, including: a supportive, safe and inclusive educational environment, literacy, education, and stigma reduction, accessibility, early intervention, mental health supports, and crisis management postvention.

The framework considers psychosocial and sociocultural factors existing outside the individual, and sometimes the individual, which are contextual factors in supporting mental health. This psychological standard, in context of the developmental and educational student mental health context shaped above, helps offer some insights into potential priorities and trends to support student mental health in the years ahead.

Many institutions have made great strides in enhancing professional mental health services and availability on campuses. That said, we still have much work to do on enhancing educational conditions to support student wellbeing, and creating resilient communities through upstream, proactive efforts. These efforts are key as a primarily reactive or responsive professional service model are unlikely to be sustainable in their absence. Priorities moving ahead include building more accessible learning environments, promoting sense of belonging, and promoting inclusion, visibility and representation, each explored further below.

Building more accessible learning environments will be critical to ensuring postsecondary curriculum and pedagogies are proactively responsive to student needs, reducing reliance on accommodations as primary focus. Tools offered by the Universal Design for Learning framework suggest many helpful strategies to creating more accessible academic environments (CAST, 2018). Many institutions are struggling to meet demand for formal academic accommodations, and formal accommodations processes have been shown to be burdensome, stressful, and pose additional barriers for students (Fischer et al., 2017). Building inclusive and accessible curricula, physical spaces, and utilizing universal design principles in pedagogical design will be critical for a sustainable path forward that meets students' accessibility needs and promotes well-being.

Building supportive living and learning environments that promote a sense of belonging will establish community resilience and a supportive environment as students navigate the inevitable stressors they will face in their lives and learning during university. These efforts support student mental health through positive, human-human interactions in non-clinical settings. This includes building residence, co-curricular and academic spaces that promote connection and belonging. Research clearly shows that, for example, residence styles that promote connection over privacy drive better outcomes regarding student social engagement, well-being and academic outcomes (McCartney & Rosenvasser, 2023). Additionally, research tells us that institutional environments that promote interpersonal and psychosocial support (academic sense of belonging) are effective at mitigating the negative consequences of stress and distress on academic and personal well-being (Ezekiel, 2021).

Engaging in continued efforts to promote inclusion, representation and visibility in post-secondary communities, and culturally responsive health and mental health services where students can see their identities and experiences reflected, will be critical as we continue to evolve professional health and mental health services to responsively meet student needs.

As we contemplate upstream, proactive, and whole institution approaches to promoting student mental health and well-being, is it critical that we also consider the capacity and experience of faculty who are often a first point of contact for supporting students in distress. See the chapter, Promoting Post-Secondary Student Well-Being, for a more in depth discussion on this topic. Classrooms are the one place within post-secondary institutions where we can reach all students, and where every student directly interacts with the institution and its representatives – predominantly through their faculty. We must continue to invest in faculty mental health, and their capacity to empathetically support and refer students to build thriving postsecondary institutions.

## Mental Health in the Classroom: Not just a student issue.

Faculty are a frequent point of contact for students whether they are attending class in person or online, with the latter having become even more common since the pandemic. Faculty have been identified as having a frontline role (Ramluggun et al., 2022), serving as a "first responder" (CACUSS & CMHA, 2014; Di Placito-De Rango, 2018), and being "gatekeepers" (Halladay et al., 2022) in supporting students wellbeing.  Given a student's regular and visible contact with faculty, it stands to reason that institutions need to understand how to effectively engage faculty in the development and delivery of student mental health supports and services. Research has focused on the students' experience with mental health and wellbeing (Ramluggun et al., 2022; Roberts, 2018), and on the trends and prevalence of mental health and addiction among post-secondary students (MacKean, 2011), but little has been researched about the lived experiences of faculty in supporting students with their mental health and well-being (Di Placito-De Rango, 2018; 2022, Kalkbrenner, 2016; Kalkbrenner et al., 2021; Read et al., 2023) or about the impact on faculty mental health from the pressures of the role including the expectation to have the knowledge and skills to effectively respond to students' mental health struggles (Cordaro et al., 2024; Melnyk et al., 2021).

As noted in the chapter, Promoting Post-Secondary Student Well-Being, in this volume, with respect to supporting students' mental health, faculty are in a prime position given the opportunity to develop working relationships with students through regular communication about course work and assignments. The frequent

interaction with students provides opportunity to witness struggles with mental health. These interactions that might signal the presence of mental health struggles can include repeatedly missed assignment due dates and late submissions; little to no engagement with their classmates; little or strained participation in team assignments or activities; absenteeism; and curt or rude written communication to other students or to the faculty members. These indications may present differently working in a digital learning environment but are similar in the student disengaging in their learning experience.

Any time a faculty member reaches out to a student to help with what they suspect may be a mental health issue there is an element of risk for both parties. The outreach may be well received and there is no problem. However, the other possibilities may be less positive and may include: the student's resentment toward the faculty; student-faculty boundaries may be blurred for one or both parties (Ramluggun et al., 2022), or one party may misinterpret the intent of the other.  Training in mental health support is one way to educate faculty on how to best to support a student in crisis and can mitigate any potential conflict between the student and faculty member.

Because a faculty member is in front of the classroom does not necessarily mean they are equipped to deal with the full suite of issues students may present. Having the skills and knowledge to provide mental health support and guidance to students is not a requirement of the traditional faculty role comprised of teaching, research, and service (Di Placito-De Rango, 2018; Ramluggunet et al., 2014) and may be something some faculty are uncomfortable dealing with (Laws & Fielder, 2012). While faculty may be able to identify "warning signs" of a student struggling with mental health wellness (Di Placito-De Rango, 2022) and have a genuine interest in supporting students' mental health, they may not have the knowledge, or skills, to do so effectively (Laws & Fielder, 2012; Margrove et al., 2014; Ramluggun et al., 2022). It is important to note as Di Placito-De Rango (2018) does, that having faculty involved as a support for student mental health does not mean faculty are expected to offer an assessment or diagnosis. Instead, their role is to be able to guide students to appropriate resources and supports, ensure a safe learning environment that values and promotes mental health and wellness, and to be actively engaged in their institution's efforts for mental health and wellness (p.285).  Faculty tend to be most comfortable with referring students onto appropriate mental health resources (Kalkbrenner et al., 2021) which reinforces the need for faculty to be fully aware of the institution's supports and services and how to access them.  Typically, Student Affairs professionals will take the initiative to reach out to faculty members to provide updated information on the campus mental health resources for students. It is of tremendous benefit for faculty and students to have those resources within quick reach.

In addition to an institution being proactively attentive to students' mental health, there is a need to understand the types of issues faculty may face with their own mental health and wellbeing.  Research has identified that faculty cope with common mental health disorders like generalized anxiety disorder and major depressive disorder as well the less well known but equally concerning disorder of compassion fatigue (Cordaro et al., 2024). A simple definition of compassion fatigue is the negative effects of helping others (Gentry, 2002) or caregiving which are vital components of teaching and working with students. The provision of student "pastoral" care (Laws & Fielder, 2012) as a part of the faculty role should not be perceived as a given.  Ramluggun et al. (2022) argue that training time and the emotional labor and stress that can accompany supporting students with their mental health are responsibilities added onto already full faculty job description. Cordaro et al. (2024) posit that for some faculty their own mental health is compromised further by being in a role that expects or requires them to care for the wellbeing of others – namely their students. Researchers have found that faculty

will hide or diminish their mental health illnesses for fear of being viewed or judged as weak or incompetent (Cordaro at al., 2024, p.2). In a profession that is known for its peer scrutiny and isolating work environment, it is not hard to understand why one would be reluctant to reveal a mental health illness.

Ultimately faculty are responsible for their own mental health and wellbeing, their need for institutional supports does not trump students' needs. Their role in student mental health is not limited to the classroom either. In fact, they can play an active role in advancing the mental health literacy (Halladay et al., 2022; Kitzrow, 2003; Read et al., 2023) within the campus community by actively engaging in mental health initiatives throughout their campus.

Institutions however must consider that faculty too may be dealing with mental health issues and not assume that faculty have the knowledge, ability, or capacity to effectively support students with mental health issues. So, in addition to mental health training, it is perhaps even more of a priority to ensure faculty have current knowledge of where students can access the appropriate resources to assist them in times of crisis.

## Employee Mental Health in the Post-Secondary Environment: CHallenges and opportunities

The mental health of staff in the post-secondary workplace continues to be a concern for this sector. In addition to the mental health challenges being faced by students and faculty, post-secondary employees are also under growing strain (Batista et al., 2022). The pressure on post-secondary environments to provide more supports to students that mirror the broader mental and physical health supports in the provincial environments continues to grow. This considering growing legal claims in situations where it has been felt that cases have not been handled appropriately lead to intense media coverage, launched internal and external reviews and in some instances protracted and expensive legal cases. Over the past couple of decades there have been instances where institutions have been accused of not appropriately handling situations that involved student mental health issues (Whitley & Berry, 2013). The work environment for employees who are expected to do more with less resources creates a fertile situation for stress and mental health challenges. This reality has been further exasperated by recent changes in Canadian immigration policies to put further limits on the financial requirements (DeRosa, 2024; Rushowy, 2024) and on the numbers and types of programs international students can enroll in to enter Canada. As Rushowy (2024) notes, "almost half Ontario's universities are now running deficits, with schools warning that student services will face cuts if the government does not provide a bump in funding…" These are but a few instances of stressful work situations that contribute to mental health challenges within the workplace.

In a Mental Health Research Canada survey conducted in summer 2023, a number of post-COVID realities were identified to confirm much of what has been anecdotally identified by senior university leadership. These include the reality that 39% of respondents feel economic issues are impacting their mental health. The impacts of inflation are affecting Canadians with 24% reporting having gone into debt as a result. Since COVID, people are struggling to make ends meet with housing and food insecurity growing at alarming rates across Canada. According to the same survey, 23% of Canadians are concerned about their ability to make rent or mortgage payments and 37% are struggling to feed themselves and their families. These statistics are alarming because

suicidal ideation among Canadians experiencing financial challenges is alarmingly high with 41% reporting having thought about suicide in the last year.

In addition to financial concerns, the Mental Health Research Canada (2023) survey showed that 27% of Canadians are currently dealing with chronic pain. Although more prevalent among older respondents (35%), more than one in seven (14%) younger Canadians (18-34 years old) also report currently experiencing chronic pain. The NASPA 2022 Compass Report identified that compensation packages (88%), workplace stress (84%) and feeling underappreciated (81%) are top reasons cited for student affairs professionals leaving the field (Batista et al., 2022). The same report showed that almost one third of respondents are not sure if they will continue in the profession in the next five years and approximately 25% of respondents indicated they are uncertain if they would recommend the profession.

The current workforce now consists of 33% Millennials (people born between 1981-1996), currently making up the largest portion of the workforce. This is followed by 29.5% Gen Xers (born between 1966-1980), 19.7% were Baby Boomers (1946-1965), and 17.6% were Gen Zs (born between 1997 – 2012). The Millennials, Gen Y and Gen Z generations are more educated and diverse than previous generations and have grown in a world that is more spiritually, gender and culturally diverse than what has been seen by previous generations. (Statistics Canada, May 2021). They equally do not report finding work as rewarding or tend to stay with the one employer as much as previous generations opting to move to change employment in hopes of finding a better work environment. With all the potential and technological savvy of the Millennial and Gen Z generations also come additional mental health considerations as the Ipsos (2021) survey found that 74% of these generations are currently identifying having mental health conditions. This compared to 64% for Gen X and 40% for Boomers makes the reality of working and leading in a post-secondary environment even more important to be aware and respectful of the mental health realities in which we are currently operating.

It is critical that staff check their own wellbeing as professionals as well as the many socio-economic, health and mental health realities that are clearly factors in todays' workplace. Staff will have to be empathetic and trusting in this reality and know that as much as they may suspect these realities, we often may not be directly aware of these challenges. According to a report by Mental Health Research Canada (2022) 21% of educators (and 22% of first responders) feel it is rarely or never safe to speak up at work. As such, we cannot assume that lack of feedback should infer that all is well.

Research is showing more and more that there are expectations within the post-secondary sector for staff to always be available and to be emotionally detached in our dealings with students, parents, and the general public (Mistretta & DuBois, 2019). Such expectations can lead to employee burnout and compassion fatigue. Many post-secondary staff roles involve continued exposure to continued stressful topics and/or environments. Such exposure can lead to burnout which can present in three ways: "...overwhelming exhaustion, feelings of cynicism and detachment from the job, and a feeling of ineffectiveness and lack of accomplishment" (p.142). When such feelings become overwhelming it can affect both work performance and personal health and wellbeing. These feelings and symptoms are personally and professional challenging for some professionals who have developed a unrealistically high expectation of themselves to be the `ideal employee'. Many post-secondary professionals involved in student services, may feel they have to be, "...totally competent, knowledgeable, and able to help everyone." (Mistretta & DuBois, 2021, p. 143-144). All this exceptional ability in a completely emotionally neutral manner and employees feeling overwhelmed should not come as a surprise.

There are several complexities leading to employee burnout in the post-secondary environment and not surprisingly, there are a variety of potential considerations that can be employed to mitigate such burnout related challenges. Getting frequent exercise can allow for increased ability to handle and to relieve mounting stress. Similarly, meditation and various relaxation techniques may also provide opportunities reduce the impacts of physical and psychological stress. Such focus on being present, positive visualization and reflection can help provide time for realistic self-awareness to be best able to conceptualize the causes and potential solutions to stress. The pressure evident in post-secondary to be the 'ideal worker' is something all employees need to be aware of and they need to be conscious of not over-extending themselves in hopes of attaining these impossible goals. Steps such as striving to create clear work-life boundaries, better time management, intentionality of breaks and social interactions with work colleagues can help to provide much needed outlets, boundaries and supports. Conversations between employees and supervisors could focus on development of self-care plans which could include much of what has been highlighted above (Mistretta & DuBois, 2021, p. 150-153).

Many employee roles in the post-secondary environment involve responding to traumatic experiences either in helping students and fellow staff members work through personal and/or professional stress. Supervisors need to be intentional in helping staff to debrief on these secondary trauma experiences. Debriefing can be low impact that does not necessarily get into the core and more detailed information of the situations, which allows for the outlet of the stress while not re-traumatizing the individual. (Mistretta & DuBois, 2021, p. 143-144) Such conversations can allow for confirmation of successful efforts and a chance to constructively build on these experiences to further enhance professional competencies. Senior level administrative employees can also help to counteractive ideal worker norms by exemplifying work life balance, encouraging professional development for staff, supporting the prioritization of social opportunities for their staff, developing mentorship programs, and speaking openly about principles of work-life balance, burnout and modelling positive and balanced work behaviours (Mistretta & DuBois, 2021, p.152-155). Encouraging work flex and work from home opportunities, and both modelling by taking vacation time and actively encouraging it amongst staff are also tangible steps that can have powerful impacts. Finally, it is important to find time to acknowledge staff both publicly and/or privately for exceptional work and accomplishments. These do not need to be grandiose expressions but simply show an appreciation that may be lacking from our respective workplaces. All of these will be helpful, but creating a supportive environment for those who need to take time off from work when needed will go a long way in helping staff feel safe and supported. Equally senior administrators, need to be willing to take time off themselves when feeling overstretched and drained. Senior administrators need to find support either within their institution amongst fellow colleagues or through engaging with people in similar roles at other institutions through professional organizations. The airlines pre-flight training masking steps clearly are applicable, we must take care of ourselves first before we can take care of others.

## Conclusion

The post-secondary landscape continues to change and expand. Increasing societal demands, continual funding challenges as governments reduce funding support and the evolving understanding of, and acceptance of mental health in the workplace will make this a reality that all professionals in this sector will need to become accustomed. In doing this, we will need to be aware of our own mental health, the mental health

of those with whom we work (both faculty and staff), parents/guardians of students, and most certainly the students whom we serve. Ultimately, building communities that are resilient and promote well-being is a collective responsibility, and we all have the opportunity – staff, faculty, students, and leaders – to contribute to community conditions enriched by positive relationships, purpose in our work and studies, and that promote our individual and collective well-being.

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**Practical Resources for further learning and application:**

- [CAST Universal Design for Learning Curriculum Toolkit](#)
- [Thriving Classrooms Toolkit](#)
- [Supporting Student Success Blog: Mental Health and Learning Among Students with Marginalized Sociodemographic Identities](#)
- [National Standard for Mental Health and Well-Being for Post-Secondary Students](#)
- [National Standard for Psychological Health and Safety in the Workplace](#)

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## How to Cite

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# Transforming Higher Education: A Case for Transformational Leadership

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## Introduction

Education plays a critical role in shaping our future by driving research and innovation and developing the next generation of leaders (Teague, 2015). Higher education leaders in Canada and elsewhere have and continue to face many challenges. Education has become more complex in a world characterized by pervasive uncertainty and marked by significant and multifaceted social, political, economic, and technological changes.

Change has always been a significant factor in education; however, changes in recent years have proven to be more challenging than imagined (Wilson Heenan et al., 2023). Some of these challenges have included the profound impacts of the COVID-19 pandemic (e.g., Blaskovits et al., 2023; Coulton, 2022; Deloitte, 2021; Universities Canada, n.d.a), the sudden shift to remote learning (e.g., Tutton, 2020), the difficult transition back to in-person learning (e.g., Alhmidi, 2022; Wong, 2022), movements advocating for social and racial justice (e.g., CityNews, 2020), a greater societal and institutional focus on equity, diversity, inclusion, reconciliation and Indigenization (Antoine et al., 2018; Universities Canada; 2023; Universities Canada, n.d.b), geopolitical conflicts (e.g., Dennis, 2022), escalating concerns about the mental health of students (e.g., Alghoul, 2022; King et al., 2023), the need to accommodate a growing demand for flexible learning (e.g., Piper, 2022; Thomas, 2021; Wotto, 2020), the increasing influence of artificial intelligence (e.g., Chisholm, 2023; D'Andrea, 2023), and policy shifts (e.g., Government of Canada, 2023), among other pertinent factors. Moreover, institutions face immense pressure to provide students with a superior education, meet diverse student needs, attract top-tier talent, release cutting-edge research, and make strategic and operational decisions that align with the needs of various stakeholder groups (Ruben et al., 2021).

### Defining Leadership and Its Importance

In the dynamic landscape described above, higher education emerges as a pivotal force in shaping the future. Despite facing a multitude of challenges, the enduring success and adaptability of higher education institutions stand as a testament to the foresight, resilience, and effective leadership behaviours exhibited by leaders. People have defined leadership in many ways; thus, it is impracticable to pinpoint a single, agreed-

upon definition. Yukl (2006) defined leadership as "the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives" (p. 8). A systematic review of leadership definitions in pharmacy education found that "the most common definitions of leadership involved motivating others toward the achievement of a specific goal and leading organizational change" (Reed et al., 2019, p. 1873). More simply, a Forbes article stated that leadership is "a process of social influence, which maximizes the efforts of others, towards the achievement of a goal" (Kruse, 2013). Our perspective on leadership aligns more closely with that of Julian Barling (2023), a distinguished leadership scholar and author. In his most recent book, *Brave New Workplace: Designing Productive, Healthy, and Safe Organizations,* he defines leadership by emphasizing its most impactful elements: "The best of leadership is about behaving ethically, being inspirational, focusing on the future, and developing employees. When leaders do so, they meet the challenge posed to all leaders by Indra Nooyi, former CEO of PepsiCo: help others rise and build a better future for all" (p. 13).

## Leadership Effectiveness in Higher Education

Much like the diverse definitions of leadership, there is no universally accepted definition of what constitutes an effective leader (Rus et al., 2010). One prominent author and scholar, Warren Bennis (2007), described six competencies of exemplary leaders: "They create a sense of mission, they motivate others to join them on that mission, they create an adaptive social architecture for their followers, they generate trust and optimism, they develop other leaders, and they get results" (p. 5). In higher education, followers may include, for example, faculty members, administrative staff, support staff, research staff, and students. Another article described the top ten most important leadership skills as (1) motivating others, (2) fostering potential, (3) inspiring trust, (4) taking on and giving up responsibility, (5) thinking strategically, (6) setting goals and expectations for everyone, (7) giving (and receiving) feedback, (8) team building, (9) positivity, and (10) authenticity (Marr, 2022). Comparably, an additional source described key leadership skills such as "communicating often and openly," "clearly communicating expectations," "being open to new ideas and approaches," "having high ethical and moral standards," "providing safety for trial and error," "being committed to ongoing training," "creating a feeling of succeeding and failing together," and "helping to grow the next generation of leaders" (Giles, 2016).

However, especially in academic settings, rather than filling leadership positions based on leadership ability or performance on these core skills, requirements typically focus on "mastery" of one's discipline, including technical knowledge, expertise, and accomplishments within their field (Ruben et al., 2021). While these accomplishments are undeniably important, leadership effectiveness requires a diverse skillset beyond technical expertise. Thus, some scholars have outlined a "leadership crisis" – citing a shortage of individuals with the qualifications necessary to effectively lead higher education institutions (Howell et al., 2022, p. 52). Conversely, we believe the opposite. We believe that many qualified educators, researchers, and professionals in Canada have the qualifications and skills to lead these institutions and drive positive change. Nonetheless, we also recognize an exciting opportunity for higher education leaders to further refine their skills and perhaps, think about leadership in a new way. In addition, knowing that change is a constant, leaders in higher education must consistently refine their approaches and skills to successfully navigate the complexity of higher education (Wilson Heenan et al., 2023).

In this chapter, we explore transformational leadership as an exemplary style that merits the attention of current and future higher education leaders. We examine the defining characteristics of transformational leadership within its historical and contemporary contexts, explain its potential benefits for higher education, and provide insights into how leaders can adopt this style.

## Transformational Leadership

Transformational leadership is one of the most studied leadership theories since the 1990s (Barling, 2023; Judge & Bono, 2000). Transformational leadership first became popular in the 1970s-80s following James MacGregor Burns' (1978) publication titled *Leadership*. This paper distinguished between two types of leadership: "transactional leadership" and "transforming leadership." According to Burns, transactional leadership emphasized a hierarchal structure between parties, involving straightforward exchanges where leaders and subordinates mutually exchange something of value (i.e. labour in exchange for a wage or salary) (Kuhnert & Lewis, 1987). This model emphasized mutual dependence and used clear punishment and reward structures to enforce this relationship. In comparison, transforming leadership focused on engaging more deeply with followers, emphasizing shared values, beliefs, and goals (Kuhnert & Lewis, 1987). As defined by Burns (1978), transforming leadership is a "relationship of mutual stimulation and elevation that converts followers into leaders and may convert leaders into moral agents" (p. 4). Thus, transformational leaders are interested in converting their followers into leaders themselves, with leadership flowing throughout the organization regardless of a person's title or position (Gardiner, 2006). This inspirational and visionary style influences both parties to seek outcomes beyond their immediate self-interests, encouraging mutual empowerment, commitment to collective goals, and positive change for the larger good (Burns, 1978, Kuhnert & Lewis, 1987).

Bernard (Bernie) Bass (1985) expanded on Burns' (1978) ideas of transforming leadership within organizational contexts in his pivotal work titled *Leadership and Performance Beyond Expectations*. He instead used the term "transformational leadership" and examined the psychological mechanisms underlying this style and its impacts on follower motivation and performance. Bass (1985) discussed the centrality of influence as a measurement of transformational leadership, which allows leaders to motivate and inspire. As a result, transformational leaders care less about their positional power and more about their influential power (Kuhnert & Lewis, 1987). He also explained how followers are willing to work harder to achieve exceptional outcomes due to their trust, admiration, loyalty, and respect for the leader, as well as their commitment to a shared mission and vision (Langston University, n.d.).

Bass further developed our understanding of transformational leadership and its components in numerous subsequent publications (e.g., Bass, 1990; Bass, 1997; Bass & Avolio, 1994; Bass & Riggio, 2006). Transformational leadership was said to focus on inspiring followers to "commit to a shared vision and goals for an organization or unit, challenging them to be innovative problem solvers, and developing followers' leadership capacity via coaching, mentoring, and provision of both challenge and support" (Bass & Riggio, 2006, p. 4). Bass & Riggio (2006) have also suggested that transformational leaders have more committed and satisfied followers. In addition, Bass (1985) developed a comprehensive framework for understanding this leadership style, which included four key components. These components include (1) idealized influence, (2) inspirational motivation, (3) intellectual stimulation, and (4) individualized consideration, which we will later describe in detail.

### *EDUCATIONAL LEADERSHIP*

Transformational leadership is also one of the central and most influential styles in educational leadership (Berkovich, 2016; Bush, 2014; Hallinger, 2003). In this field, two predominant leadership models have garnered significant research attention: instructional leadership, which shares many similarities with transactional leadership, and transformational leadership (Hallinger, 2003). The instructional leadership model emerged in the 1980s from early research aimed at understanding the factors contributing to the effectiveness of schools (Bossert et al., 1982; Edmonds, 1979; Hallinger, 2003). This model focused on leadership behaviours which positively influence student outcomes and overall school performance. This model emphasized "strong, directive leadership focused on curriculum and instruction by the principal" (Hallinger, 2007, p. 2). As Bush (2014) noted, "instructional leadership is primarily about the direction of leaders' influence because of its focus on improving teaching and learning," meaning that the primary focus is on the leader exerting their influence and guidance in a top-down approach (p. 443). However, these explanations reveal a focus on a single leader, the principal, and their leadership within individual classrooms. Additionally, much of the research promoting this leadership model focused on K-12 schools (Leithwood, 1994). Thus, this model may not capture the nuances of leadership in more complex higher education institutions, where leaders typically wield more substantial authority and assume strategic decision-making responsibilities which influence the institution, department, or division (Ruben et al., 2021).

As Hallinger (2003) described, educational reforms in the 1990s addressed some criticisms of instructional leadership. These reforms resulted from a broader dissatisfaction with the instructional leadership model, which many perceived to focus too heavily on the principal as the center of power. Values shifted from empowering the principal to empowering leadership throughout entire schools, utilizing principles of shared leadership and organizational learning, which promote a collaborative, continuous, and inclusive approach to change. Consequently, subsequent research examined transformational leadership within education. Unlike instructional leadership, which adopts a top-down approach to exerting influence, transformational leadership embraces both top-down and bottom-up approaches, focusing on empowerment and inspiring change by creating a unified school culture and commitment to higher goals (Bush, 2014). As Hitt & Tucker (2016) describe, "by focusing on fostering collaboration and continual inquiry, transformational leaders seek to shape a positive organizational culture and cultivate collective efficacy," which "binds the leader and teachers in a continual pursuit of higher purposes so that their combined efforts move the organization toward improvement" (p. 535).

Since the early 1990s, Kenneth Leithwood, Doris Jantzi, and their colleagues have championed the adoption of transformational leadership in education management (e.g. Leithwood et al., 1999; Leithwood & Jantzi, 1990; Leithwood & Jantzi, 2005). To do so, they adapted Bass' work by creating a new model of transformational leadership in schools and describing this style as a requirement for any school's success in the 21st century. The following eight dimensions were included in this model: (1) building school vision, (2) establishing school goals, (3) providing individualized stimulation, (4) offering individualized support, (5) modelling best practices and important organizational values, (6) demonstrating high performance expectations, (7) creating a productive school culture, and (8) developing structures to foster participation in school decisions (Leithwood, 1994; Leithwood et al., 1999). Furthermore, Leithwood & Jantzi (1990) found six broad strategies that transformational educational leaders used: (1) strengthened the school's culture, (2) used a variety of bureaucratic mechanisms to stimulate and reinforce cultural change, (3) fostered staff development, (4) engaged in direct and frequent communication about cultural norms, values, and beliefs, (5) shared power and responsibility with others, and (6) used symbols to express cultural values.

Despite its prevalence and support within the literature, transformational leadership has yet to be the most prevalent leadership approach in practice or policy for reasons we will address. Before diving into its challenges, we will first examine the benefits of this leadership approach in more detail. Subsequently, we will analyze the components of transformational leadership to illustrate why this approach yields such benefits.

*Benefits of Transformational Leadership*

In a systematic review of 15 studies, Wilson Heenan et al. (2023) found that transformational school leadership was closely related to a multitude of positive impacts on school staff and culture. This connection was attributed to increased "organizational and team cohesiveness, collaboration, organizational health, collective efficacy, effective learning and staff development, and increased school productivity" (p. 19). Additional research has reinforced the positive effects of transformational leadership on educators, including positive impacts on job performance, job satisfaction, and school commitment, all of which contribute to overall school success (Dumay & Galand, 2012). As highlighted by Espinoza (2013), educational leaders who embrace a transformational leadership style foster an environment where teachers are more likely to become leaders themselves (Robinson et al., 2008). Moreover, this leadership approach contributes to the development of stronger teacher efficacy, heightening their perception of their ability to positively impact students, work through issues that arise, and drive positive change (Bangs & Frost, 2012; Demir, 2008; Leithwood et al., 1999).

Ross & Gray (2006) found similar results, with transformational leadership influencing collective teacher efficacy, and predicting commitment to the collective mission, engagement with community partners, and active participation in professional learning. Similarly, Kareem et al. (2023) found that transformational leadership significantly impacted teacher commitment to student development, self-development, and the institution by promoting educational innovation, building a collaborative culture, and empowering leadership through all organizational levels.

Leithwood and Jantzi (1999, 2000, & 2006) demonstrated that transformational leadership leads to stronger organizational commitment and better student engagement. Likewise, Griffith (2004) found that principal transformational leadership was positively associated with teacher job satisfaction, which was associated with lower staff turnover, higher school-aggregated student achievement progress, and lower achievement gaps between minority and non-minority students. This finding demonstrates the positive influence of transformational leadership on achieving educational equity. Shields (2023) echoes this sentiment, arguing that transformational leadership is best suited for today's complex and diverse schools due to the theory's orientation toward equity, justice, and creating a better future for everyone. Lastly, Bastedo (2014) looked at links between performance outcomes and charisma, a trait that allows transformational leaders to influence, motivate, and empower those around them (Williams Jr et al., 2018). This study found positive relationships between president charisma, enrolment applications, and financial donations from alums, demonstrating more potential, practical benefits.

Furthermore, numerous articles outline transformational leadership as a particularly effective leadership style when organizations face turmoil or must quickly respond to change (Basham, 2012). Transformational leadership is a change-oriented strategy since it pushes organizations and their people to continuously improve

in the short and long term to achieve a higher purpose (Murthy, 2022). One study found a positive association between transformational leadership and follower motivation, where transformational leaders influence followers to be more engaged and inclined to perceive the positive or attractive aspects of organizational change (Faupel & Süß, 2019). This positive outlook, in turn, promotes positive behaviours that endorse and contribute to successfully implementing those changes (Faupel & Süß, 2019). Deschamps et al. (2016) also discussed the connection between transformational leadership and change management. They described how transformational leadership promotes a culture that prioritizes organizational justice, where people believe their leaders and the decisions they make are fair. They also explained that "during a period of change and restructuring, the perception of justice is crucial concerning many aspects of employee behavior because it positively influences motivation, productivity, and performance" (p. 196). Transformational leadership promotes organizational justice by focusing on ethical behaviour, fair treatment, and instilling trust and confidence in followers, which positively impacts satisfaction, commitment, and performance (Deschamps et al., 2016).

Together, these studies demonstrate the many potential benefits of adopting a transformational leadership style. These benefits, most notably, include (1) increased school cohesiveness, (2) increased school commitment, (3) increased productivity, (4) increased adaptability to change, and (5) decreased turnover intentions, which leads to greater staff, student, and institutional performance. However, Ross Paul (2015), an advocate for higher education and former president of the University of Windsor and Laurentian University, describes an interesting paradox in his book *Leadership Under Fire: The Challenging Role of the Canadian University President (Second Edition).* Despite many educational leaders readily exhibiting transformational leadership behaviours, Paul (2015) discusses how "very few presidents, in Canada at least, would be described or would describe themselves as transformational leaders" (p. 65). Based on the wealth of research outlining the benefits of transformational leadership in organizational and educational contexts, we urge current and future higher education leaders to boldly adopt the title and behaviours of transformational leaders, which we will further describe in the next section.

## Components of Transformational Leadership

The four components of transformational leadership, commonly referred to as the 4 I's, were first introduced by Bass (1985) and have since been refined by many scholars. Instead of an adapted educational leadership model, we have embraced the comprehensive nature of the 4 I's framework, which we believe is relevant and applicable to higher education contexts. Leaders who practice these four behaviours are said to be transformational leaders.

### Idealized Influence

Idealized influence refers to leaders acting as role models and earning followers' trust, admiration, and respect (Paul, 2015). This component reflects the ethical element of transformational leadership, where leaders are motivated by a moral commitment to the collective good rather than being guided by their own self-interests (Barling, 2014). Leaders with idealized influence place a strong emphasis on relationship building, and strengthening their interpersonal, communication, and overall leadership skills (Al-Husseini & Elbeltagi, 2018). They lead by example, express confidence in the organizational vision, act with integrity and humility, and show a deep respect for others (Barling, 2014). As a result, people look up to these leaders because they "walk

the talk" by putting their words into action, thus establishing a foundation of trust and credibility (Kouzes & Posner, 2017). In turn, people are more committed to their leaders, jobs, and the people around them (Al-Husseini & Elbeltagi, 2018). This increased dedication translates into greater willingness to work hard and make a difference, which in turn, reduces their likelihood of leaving the organization (Langston University, n.d.).

Higher education leaders committed to demonstrating idealized influence must consistently be role models within their community and show that their actions align with their words. For example, a higher education leader who emphasizes the importance of academic integrity must set clear ethical standards and exemplify high integrity with their actions. Similarly, a leader who says they are approachable must take actions to be approachable, such as scheduling regular office hours or casual gatherings like coffee chats. Other simple actions such as making eye contact, maintaining an open posture, making small talk, and expressing gratitude can further reinforce a leader's approachability (Goman, 2018; Kouzes & Posner, 2017; Waber et al., 2014). Ultimately, the leader must prioritize creating a safe space, showing empathy, and actively listening to their followers. Moreover, trust is crucial to building and maintaining meaningful relationships (Frei & Morriss, 2020). Leaders can build trust by showing vulnerability and allowing followers to know them as leaders and individuals (Rosh & Offermann, 2013). For instance, leaders can share lessons from their mistakes and stories of perseverance (Lewis, 2022). Overall, these actions demonstrate idealized influence because they position the leader as a role model and contribute to building trust and nurturing relationships.

## Inspirational Motivation

Inspirational motivation refers to motivating and inspiring followers by articulating a compelling vision of the future (Paul, 2015). Leaders with inspirational motivation skilfully communicate a shared vision, creating a greater sense of purpose and stimulating enthusiasm and commitment towards the vision (Al-Husseini & Elbeltagi, 2018). They do so by interacting with followers, setting challenging but realistic goals, and using storytelling to encourage individual and team pride (Barling, 2014). These leaders encourage employees to work hard and achieve more than they thought possible, increasing their sense of accomplishment, meaning, and commitment to the leader and organization (Howell et al., 2022). This sense of empowerment makes followers believe they can overcome current and future challenges, creating a culture of resilience (Barling, 2014). Through these actions, transformational leaders promote shared values and long-term change, which positively affects individual and team performance (Barling, 2014).

Effectively communicating a shared vision is the primary way higher education leaders can demonstrate inspirational motivation. For example, a leader who knows there is a mental health crisis and who is committed to addressing it can craft a vision of a campus environment that prioritizes well-being. The leader can organize a university-wide discussion or event on mental health, explicitly outlining why addressing mental health is important to the leader and how the university can improve. Once the vision is communicated, the leader can organize collaborative goal-setting sessions, allowing faculty, staff, and students to contribute their ideas for achieving this vision. With the help of multiple stakeholder groups, the leader can re-evaluate and re-imagine how the university can promote positive mental health on campus. Following this, they can establish milestones and introduce new resources to achieve the vision. Through these actions, the leader inspires motivation, commitment, and a shared sense of purpose.

*Intellectual Stimulation*

Intellectual stimulation refers to stimulating the intellectual capabilities of followers (Barling, 2014). Leaders can do so by encouraging them to think for themselves, question their assumptions, reframe problems, use their imagination, and approach old situations in new ways (Paul, 2015). Leaders who intellectually stimulate their followers promote problem-solving and strategic thinking from everyone (Howell et al., 2022). In doing so, leaders create and promote a culture of curiosity, creativity, and innovation (Paul, 2015). By consistently challenging followers to perform at higher levels, these leaders instill a belief that they can accomplish great things (Steinmann et al., 2018). Consequently, leaders encourage others to become leaders themselves, irrespective of their formal position or authority (Barling, 2014). Besides increasing individual and team commitment and performance, these behaviours allow leaders to influence and nurture the next generation of critical and forward-thinking leaders (Barling, 2014).

Higher education leaders committed to inspirational motivation must inspire their followers to be innovative and to be leaders themselves. For example, leaders can promote innovative teaching methods, such as hands-on learning experiences like cooperative education programs or accessible resources like open-source textbooks. Leaders can also foster innovation and collaboration by promoting cross-disciplinary research projects for students and faculty (Mills, 2022). Furthermore, leaders can prioritize sharing power when possible rather than leading with authority and giving strong directives. For instance, leaders can refrain from recommending solutions and instead inquire about the perspectives of their team, who can provide valuable solutions themselves. In doing so, leaders instill confidence and empower others to be critical thinkers and leaders.

*Individualized Consideration*

Lastly, individualized consideration refers to genuinely caring and paying particular attention to the needs and feelings of others (Paul, 2015). Leaders who provide individualized consideration demonstrate concern for each person's well-being, achievement needs, and growth needs through appreciating, supporting, coaching, and mentoring (Loon et al., 2012). No matter how brief or in what form, leaders use compassion and empathy to actively listen, focus on the other person, and make each person feel seen, heard, and valued (Barling, 2014). As a result, they are more motivated to have a personal interest in the success or failure of the shared vision and, thus, will continue developing themselves to perform better (Langston University, n.d.). Transformational leaders consider the lived experiences of everyone they can reach, and they reach far to hear these perspectives, driving change that results in better experiences for everyone (Kareem et al., 2023). They look at the unique situations and struggles facing their people and institutions. In particular, they amplify the voices of students who have often been overlooked in educational settings – such as minority students, students with low socioeconomic status, and students with disabilities (Shankar et al., 2013). Overall, individualized consideration is vital in promoting engagement, morale, and performance among all followers, along with advancing equity and inclusivity (Al-Husseini & Elbeltagi, 2018).

Higher education leaders can exemplify individualized consideration by listening. For example, leaders can schedule recurrent one-on-one meetings with different follower groups, such as groups of students or academic departments, to understand and address their unique needs and feelings. Leaders can also demonstrate individualized consideration by trying to learn the names of the people around them. This seemingly simple gesture is quite meaningful, as it communicates to people that they are seen, valued, and respected (Panwar,

2022). Furthermore, leaders can signal their commitment to their followers by regularly taking the time to say thank you or, better yet, by writing personalized thank-you cards (HBR Editors, 2023; Locklear et al., 2020). For example, if a leader meets with a student association about their concerns, sending a thoughtful email or card after the fact about what they learned or appreciated signals that they genuinely care. By getting to know people, responding to their needs, and practicing gratitude, leaders contribute to a more supportive environment where everyone can thrive.

As higher education leaders continue to navigate the intricacies of their institutions, the 4 I's of transformational leadership – idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration – stand as guiding principles for those who seek to inspire, motivate, and lead with lasting impact. Without these principles, the institution may lack direction and inspiration, where faculty, staff, and students are disengaged, unfulfilled, and have little motivation to strive for great things. As a result, these institutions would struggle to foster a vibrant community which prioritizes collective achievement and success and where everyone can grow and thrive together (Davis, 2023).

## Criticisms of Transformational Leadership

As previously noted, transformational leadership is not the most prevalent leadership approach in practice or policy, prompting the question of why this is the case. A primary critique of transformational leadership is its ambiguity and lack of conceptual clarity (Bass & Riggio, 2006; Ruben et al., 2021). Critics argue that the theory is vague, subjective, and focuses too much on the leader's vision and personal traits, making it difficult to consistently evaluate and measure the style. Critics also argue that the breadth of transformational leadership makes it challenging to distinguish it from other styles. For example, scholars describe similar traits and actions with charismatic, servant, and authentic leadership, making it difficult to differentiate and define the unique characteristics of each (Anderson & Sun, 2017). In addition, some critics argue that the visionary aspect of transformational leadership is unsuitable for educational contexts. They argue that transactional or instructional leadership is better suited for higher education leaders since directive rather than visionary leadership is crucial for the "more routine and less glamourous aspects of academic life" (Ruben et al., 2021, p. 141).

You may share the same criticisms that transformational leadership seems unrealistic or too visionary to be practical. Nevertheless, we argue that the theory's "lack of conceptualization" serves a purpose. Transformational leadership emphasizes change, adaptability, flexibility, and self-reflection on the part of the leader. Strong transformational leaders must take the time to look into the future, listen to their followers, determine what collective vision drives the organization, and apply transformational leadership principles in meaningful ways to build commitment and trust.

Furthermore, transformational leadership is well-suited to educational contexts since its core principles seamlessly align with the typical objectives of higher education. These values include innovation, collaboration, inspiration, integrity, adaptability, and inclusivity – all of which align with transformational leadership and contribute to the forward-thinking culture of many academic institutions. The style also promotes inspiration and motivation – qualities which can get lost in increasingly complex and changing environments (Carucci, 2022; Murthy, 2022). Without these qualities, higher education institutions may struggle to foster a sense

of purpose and commitment among their people, leading to a potential decline in morale and performance (Langston University, n.d.). A lack of purpose and commitment can also lead to resistance to change and an inability to adapt to new challenges, which can result in lost opportunities to better the institution (Hubbart, 2023).

Critics have also raised concerns about this approach being "elitist" and "anti-democratic" because of its emphasis on individual leaders' actions (Bass & Riggio, 2006; Ruben et al., 2021). Transformational leadership emphasizes the charismatic qualities of leaders, including their vision, inspiration, and personal appeal, which has led some to argue that it can create an environment of manipulation, unchecked authority, and megalomania (Tourish, 2013). The potentially dark side of this style emerges when a leader's personality and motives are unethical or self-serving, which can result in authority being based on superiority and personal charm rather than democratic or moral principles (Wilson Heenan et al., 2023).

Realistically, any leadership style has the potential for negative consequences and harm (Lin et al., 2019). These consequences are not inherent to the theory but the result of leaders misapplying it. As Berkovich (2016) and Wilson Heenan et al. (2023) describe, rather than abandoning transformational leadership as a theory, it is an exciting time to address these shortcomings and apply it in real-life contexts.

## How to Be a Transformational Leader

In this section, we will explore some guidelines for higher education leaders on applying transformational leadership in their institutions.

*Lead boldly.* Transformative leaders must have a clear understanding of who they are and what their core values are (Kouzes & Posner, 2017). Challenge not only your own ways of thinking but also those around you. Imagine a better future and find innovative ways to think, operate, and achieve. With your energy and enthusiasm, get people excited about your vision and excited to be a part of your team or institution (Bakker et al., 2023).

*Walk the talk.* Higher education leaders should be mindful that every action has a powerful influence (Mrig & Sanaghan, 2017). It is crucial that your behaviours align with your values to establish yourself as a credible leader and help build trust (Kouzes & Posner, 2017). Set clear goals with yourself and check in frequently (Ravishankar & Alpaio, 2022). Hold yourself accountable and learn from your mistakes through frequent self-reflection (Abusaid, 2023). Embrace your successes and failures and recognize that both make you a better leader (Wells, 2023).

*Be visible.* Show up as much as you can. Not only does visibility help you stay in touch with what is happening, but it also shows that you care (Kouzes & Posner, 2017). In doing so, you become more genuine and human, which demystifies you as a person (Smith & Cheng-Cimini, 2023). You also reinforce that you genuinely care about the well-being of your institution and its people.

*Build strong relationships.* Building strong relationships requires actively listening and valuing the diverse perspectives within your institution and community (Bourke & Titus, 2019). Communicate frequently and

meaningfully with your followers – not only at major events and not only with your direct reports and inner circle (Kouzes & Posner, 2017). Ask thoughtful and meaningful questions to discover what people value and need. Demonstrate that you value their input and perspective and reinforce that their input truly matters (University of Massachusetts Global, n.d.). Recognize that sharing power makes you a stronger leader, not a weaker one (Battilana & Casciaro, 2021). Create a safe environment and seek involvement from your followers in decision-making (Steinmann et al., 2018). Be willing to accept feedback and criticism, even if it differs from your viewpoint (Scott et al., 2023).

*Bring your vision to life.* To inspire people, you must paint a compelling vision you genuinely believe in (Kouzes & Posner, 2017). Utilize the power of storytelling and metaphors to make it more relatable and emotionally impactful (Gothelf, 2020). Use cultural symbols such as logos, mascots, school rituals, and other unique forms to make your vision more concrete and tangible (Kouzes & Posner, 2017). Highlight examples that demonstrate the higher purpose you are striving to achieve (Cherry, 2023). These actions demonstrate your commitment to making a difference and motivating the people around you to feel the same.

*Prioritize your well-being.* Lastly, healthy institutions must prioritize the well-being of everyone involved, including its leaders (McKinsey Health Institute, 2022). Much research has demonstrated that leadership impacts employees' overall well-being (e.g., Arnold et al., 2007; Baer et al., 2015; Kelloway et al., 2012; Kloutsiniotis et al., 2022). Besides the personal consequences of extreme stress (i.e., personal distress, increased alcohol use, sleep disturbances, insomnia), there are severe consequences for entire organizations, including low morale, absenteeism, increased turnover, and deteriorated performance (Maslach & Jackson, 1981). As a result, you must take care of yourself by engaging in positive health behaviours, including getting enough sleep, regularly exercising, prioritizing proper nutrition, practicing mindfulness, taking time to disconnect from work, and maintaining a solid support system (Mazurek Melnyk & Neale, 2018). By safeguarding your well-being, you will make better decisions, be a better leader, and positively contribute to your institution's overall health and success (Brower, 2023).

## Moving Forward

As articulated by Jim Kouzes and Barry Posner (2017), award-winning authors and leadership scholars, in their book *The Leadership Challenge: How to Make Extraordinary Things Happen in Organizations*, "We often think of leadership as something big and grand, but based on my experiences, I think real leadership is everywhere and in the daily moments. We all have several opportunities in our daily lives to seize the moment and be the leaders we can be. Each and every one of us has a choice to be that leader" (p. 296). In every choice we make, and in whatever role we play, the potential to be a transformative leader exists.

Being a leader in higher education is indisputably a challenging undertaking. Despite its challenges, we urge higher education leaders to adopt and promote a transformational leadership style. Besides the core principles of transformational leadership aligning with the core values of most academic institutions – notably innovation, adaptability, and inclusivity – it allows higher education leaders to create an environment where individuals are inspired to reach their full potential, and institutions can strategically adapt to change. As a result, transformational leaders can create an impactful legacy within their institutions and the broader community and contribute to achieving a brighter future.

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# The Role of the Physical Campus for Productivity and Health

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## Introduction

Canada's oldest universities were established in the 19th to early 20th century, and the 1960s to 1980s saw the boom of new universities established and built (Anisef et al., 2015). Many more have emerged since then, a few of which built from scratch (e.g., University of Northern British Columbia, Weller & Soleau, 1996) but most of these universities transformed from existing university colleges and community colleges (Anisef et al., 2015).

Physical campuses in Canada are diverse: some are in city downtowns (e.g., University of Toronto), others in suburbs (e.g., University of Manitoba) and small towns (e.g., Acadia University). They vary in physical size from large (e.g., University of Saskatchewan) to small (e.g., St. Thomas University), and the buildings on campus can be centuries-old (e.g., University of New Brunswick), modern (e.g., Emily Carr University of Art and Design), or a mix of both.

Campuses have been designed for their educational missions by design practitioners based on certain, often untested, assumptions (Hajrasouliha & Ewing, 2016), and space planning decisions have not necessarily been informed by empirical evidence regarding the relationships between space and teaching, learning, and research (Temple, 2008). Although interest in such relationships has grown over the last two decades (e.g., Oblinger, 2006; Leijon et al., 2022), research on users' perceptions and usage of the physical campus is lacking (McDonald-Yale & Birchall, 2021). Designing the physical campus with the end-users in mind is needed (Cleveland & Fisher, 2014; Vischer, 2008).

The physical campus serves many roles: a place for learning, for social interactions, relaxation and restoration, physical activities, campus social and cultural events, and for some, a place of residence. The campus is not only a place for students, but also a place of work for faculty and staff, and a place for visitors and the community-at-large. As Coulson et al. (2023) points out, campus is more than a collection of buildings and is indeed a community of its own.

To facilitate high-quality post-secondary education, the physical campus must support students in

learning, faculty in teaching and research, and staff in the administration of programmes and services. To achieve high productivity, the campus must also enhance the wellbeing of all members. In this chapter, I address how some aspects of the physical campus environment may play a role in the productivity and wellbeing of the post-secondary community, with special reference to Canadian campuses whenever possible. This chapter will end with a discussion of issues regarding the future role of the physical campus in higher education.

## Theoretical Perspectives regarding Environment-Behaviour Interactions

Several theoretical perspectives are relevant when considering the role of the physical campus in productivity and health. Despite a common belief in architectural determinism (i.e., building design controlling behaviour), alternative views regarding the relationships between environment and behaviour include architectural possibilism (i.e., environment setting certain limits on behaviour) and architectural probabilism (i.e., behaviour made more likely by the setting) (Porteous, 1977).

From an environmental stimulation perspective, behaviours (e.g., learning) can be affected by the sensory stimuli and people in the physical environment (e.g., classroom, open green space) through cognitive (e.g., attention, concentration), physiological (e.g., comfort level), and affective means (e.g., motivation), according to Choi et al.'s (2014) cognitive load model.

From an ecological perspective, the university campus can be considered a "behaviour setting" (Strange & Banning, 2015), and the campus itself can encompass several behaviour settings nested within one other. A behaviour setting, as conceptualized by Barker (1968), consists of the physical setting and a naturally occurring pattern of behaviours. The setting provides affordances (Gibson, 1979), which are attributes that can provide functional possibilities for a participant as that participant sees fit (Heft, 2012). For example, a flat surface a foot off ground can be seen as suitable for sitting. When in the setting, the participant's choices of behaviours are constrained; appropriate behaviours are maintained, and inappropriate behaviours are sanctioned by the collective actions of others (Heft, 2012). To achieve synomorphy (i.e., similarity in structure), the physical setting needs to fit the programme (i.e., a prescribed sequence of actions taken by the participants as they carry out the essential activities of the setting (Heft, 2012; Wicker, 1984). As an example, the instructor and students are expected to act in certain ways (e.g., listening, taking notes) when in the behaviour setting of a classroom, where the ambient and spatial features, furniture, and technology provide affordances for the delivery of the programme.

## Teaching and Learning

Teaching and learning on campus can take place in formal learning spaces (e.g., traditional classrooms, lecture halls, technology-infused classrooms, laboratories, and active learning classrooms) where there are fixed schedules set for their use (Painter et al., 2013), and in informal learning spaces (e.g., libraries, group study spaces, coffee shops) (Becker et al., 2015).

*Formal Learning Spaces*

Traditional Classrooms and Lecture Halls

For a long time, higher education has followed the behavioural/cognitive pedagogical model that emphasizes the expertise of the faculty. Programmed instructions are delivered in classrooms and lecture halls, where the physical space often involves a podium at the front for the instructor and rows of desks and chairs for students at the back (Beckers et al., 2015). While there is a body of research on the influence of the physical environment of K-12 classrooms on behaviour, attitudes, and performance of both teachers and students (e.g., Barrett et al., 2015; Byers et al., 2018; Weinstein, 1979; Woolner et al., 2007), such research in higher education is still in its early development (Ellis & Goodyear, 2016; Leijon et al., 2022; Temple, 2008).

Highlighting what we do know about physical space and post-secondary, several studies have shown lighting, temperature, and particularly noise to be important. For example, in an early field experiment in a western Canadian university, Ward and Suedfeld (1973) showed that highway noise outside the classrooms reduced students' self-reported participation and attention in class, audibility of comments, and enjoyment in discussions. In a laboratory experiment (Marchand et al., 2014), university students who listened to a passage in a classroom where the lighting, sound, and temperature were set outside the comfort zone reported having more negative emotional states and lower test scores than those in the classroom set at normal comfort level, and students attributed their poor performance to the sound and temperature in the room. In Yang et al.'s (2013) study, students believed temperature, artificial lighting, and particularly acoustics impacted their academic performance. In an Italian study, students perceived acoustic comfort to be most strongly related to background noise and speech intelligibility and visual comfort to be correlated with illuminance value and glare (Ricciardi et al., 2018). Also desirable is a view to outdoors (Douglas & Gifford, 2001), especially a view of nature (Benfield et al., 2015).

Having comfortable furniture is also important to students. For example, in a study of 35 classrooms in two Canadian universities, students reported a preference for comfortable seating and seating arrangements that supported interaction (Douglas & Gifford, 2001). Students in the "soft classroom" that had fabric wall decorations, covered seats, and carpeting reported enhanced participation in class (Sommer & Olsen, 1980), and the results persisted 17 years later (Wong et al., 1992).

The issue of seating location in the classroom was of interest to educators. In a critical review of research studies that used randomly assigned seating versus self-selected seating, Montello (1988, p. 149) concluded that there was no solid empirical evidence for seating location influencing course grade, but there was evidence for seating location influencing class participation and attitudes about the course. In the Yang et al. (2013) study, students sitting in the middle or front of the classroom reported the highest visibility and best acoustics, which are qualities that may have contributed to the high engagement and quality of classroom experience (Park & Choi, 2014; Shernoff et al., 2017) and course grade (Shernoff et al., 2017) reported by students sitting in those areas. Alternatively, the seating location choice could also be influenced by students' academic achievement, desire to engage, or other factors (e.g., personality, Montello, 1988; student confidence, Park & Choi, 2014).

As demonstrated, physical space can have many impacts on students, though unfortunately as yet, very

few field experiments can demonstrate a clear causal effect on learning. This is especially challenging in field work because of the likelihood of confounding variables including students self-selecting into course sections, classrooms, and so on. Nevertheless, echoing Temple (2008) and Woolner et al.'s (2007) review of K-12 classrooms, there is more evidence of impact on learning when the quality of physical environment is below a threshold level (e.g., inadequate lighting) than when it is above. Studies that examine preferences, satisfaction, and perception of various aspects of the classroom are correlational in nature, but they do indicate where improvements could be made.

Technology-infused Classrooms

In recent years, technological equipment has been added to many traditional classrooms (e.g., Browne & McCluskie, 2018). These may include computers at the lecture podium, overhead digital projectors, projection screens, and video and Internet viewing capabilities (Painter et al., 2013). A discussion of the use of technologies in the classroom is beyond the scope of this chapter.

Active Learning Classrooms

Since the last decade or so, some educators have called for a social constructivist, student-centred approach to learning that emphasizes communication and social interaction as essential activities in the generation and development of knowledge (Beckers et al., 2015). These educators have advocated for a flexible and adaptable design for teaching and learning spaces that they believe support active, collaborative learning (King, 2016). Active learning classrooms are generally equipped with movable furniture, often including round tables, accessible outlets, computers, mobile whiteboards, projectors, video, Internet, and other accessories (Painter et al., 2013), though active learning classrooms do not necessarily need to be equipped with sophisticated technologies. These new technologies and pedagogical practices may necessitate new classroom lighting guidelines (Castilla et al., 2018) and acoustics considerations (Finkelstein et al., 2016)

In Canada, since 2007, McGill University has developed a set of design principles for teaching and learning spaces that includes layout, furniture, technologies, acoustics, and lighting/colour (Finkelstein et al., 2016) and has designed several active learning classrooms (Active learning classrooms (ACLs), n.d.). Similarly, University of British Columbia has been transforming their learning spaces to support teaching and learning that is "accessible, immersive, collaborative, and technology-enriched" (Active learning classrooms, n.d.). No doubt other universities are following suit.

Despite an increase in new active learning classrooms, there is limited evidence of their effects on important student outcomes (Leijon et al., 2022; Thomas et al., 2019). That said, in highly cited early evaluations of two projects (SCALE-UP and TEAL) in which learning spaces, pedagogical approaches, and teaching materials were all modified, Belchner et al. (2007) and Dori & Belchner (2005) reported improved performance in conceptual learning, problem-solving, communication and teamwork skills, and decreased drop-out rate among students. It is important to note that most evaluations were qualitative, case studies (e.g., Fisher & Newton, 2014; Salter et al., 2013), and although helpful for providing insights, it is not clear that findings will generalize to other campuses.

Do changes to the spatial design of classrooms alone have any effects on student experiences and course

outcomes? To answer this question, researchers have compared two sections of the same course taught by the same instructor using active learning pedagogy, one in a traditional classroom and one in an active learning classroom. The results of these quasi-experiments have been mixed: some studies show increased student performance (Brooks, 2011; Ralph et al., 2022), retention rates (Ralph et al., 2022), and interest and engagement (Clinton & Wilson, 2019; Sawers et al., 2016); others show higher student satisfaction with an "upgraded" classroom but no differences in expected grades (Hill & Epp, 2010); whereas others show no significant difference in gain in content knowledge, in-class attendance (Vercellotti, 2018), or course grade (Bruner et al., 2022).

Disappointingly, in a three-semester study, Perks et al (2016) at the University of Lethbridge demonstrated that the effects of classroom renovation did not persist, and satisfaction among students and instructors returned to the baseline level in the third semester, although the classroom continued to be seen as an effective learning space. Looking at instructors alone, simply changing the physical design and adding new technology to the learning spaces does not automatically lead to a change in pedagogical practice. For example, in Swinnerton's (2021) study, those academic staff who did not ask for use of a redesigned space continued to use the redesigned room in lecture format.

Like before, these quasi-experiments suffer from several confounding variables. These include self-selection of student into course sections (Ralph et al., 2022), differences in class sizes between active learning classrooms and lecture-theatres (Ralph et al., 2022), differences in the design of active learning classrooms (Ralph et al., 2022), and the novelty of change itself between before- and after- renovation (Perks et al., 2016). Additionally, and importantly, there are also confounds related to instructors: instructors were volunteers who tended to already use active learning strategies in class (e.g., Perks et al., 2016; Ralph et al., 2022). Finally, items in the scales used to measure student engagement (Bruner et al., 2022; Sawer et al., 2016) and on-task behaviour (Brooks, 2012) could be biased toward one pedagogical approach or the other.

A common theme across several studies (Brooks, 2012; Park & Choi, 2014; Sanders, 2013) is that learning works best when instructors use rooms designed for that type of pedagogy: traditional classrooms for lecture-based courses and active learning classrooms for group-focused courses. In more recent studies, researchers have sought to delineate how learning space, teaching philosophy, pedagogy, learning activities, instructor behaviour, student engagement and other variables are inter-related by testing various path models (e.g., Sawers et al., 2016; Thomas et al., 2019).

In short, the research findings so far seem to suggest that any successes of active learning spaces over traditional classrooms are due to instructors using an active, collaborative learning approach to teach in a space designed for that purpose. That is, the technology, furniture, and spatial layout "afford" such functions, as Barker's (1968) behaviour setting theory described earlier suggests. While the active learning spaces seem to enhance students' enjoyment, participation, and engagement in learning activities and perhaps performance, they do so in concert with pedagogical practice, instructor behaviour, learner characteristics, and other factors.

*Informal Learning Spaces*

Library or Learning Commons

The library was traditionally designed for access to print materials and for individual study activities. In the mid-1990s, the library was transformed into the information commons, with a new focus on providing access to computers and other equipment, the Internet, and library and technology support services (Turner et al., 2013). Beginning around 2000, the information commons was replaced with the learning commons, with the aim to support learning and knowledge creation as the pedagogical view shifted to the social nature of learning (Turner et al., 2013). Changes also occurred so that many libraries now also hold a coffee shop, spaces for students to relax and socialize, and spaces for students to access academic support services (Waxman et al., 2007).

Researchers have used unobtrusive observation, time-lapse photographing, and questionnaire surveys to assess effectiveness of library use by examining student preferences and usage patterns across space (e.g., Asher, 2017; Harrop & Turpin, 2013; Rollings & Kayongo, 2022). The results have generally shown that students use the library to study alone or in a group, but they use library space less so for group work (Kim et al., 2021; Rollings & Kayongo, 2022). Students prefer private and quiet spaces for studying (e.g., preparing for exams) (Applegate, 2009; Kim et al., 2021; Suarez, 2007), and study rooms for individual study or group work (Applegate, 2009; Suarez, 2007). This is not surprising: noise can be a problem for private studying in the library (Damián-Chávez et al., 2021; Suarez, 2007). For group work, students prefer spaces where they can talk without disturbing others, either in enclosed study rooms or in open areas. Therefore, it is recommended that libraries implement a policy for acceptable noise levels for the various spaces within the library based on usage needs (Kim et al., 2021; Rollings & Kayongo, 2022). Related to physical spaces in libraries, students report concerns about crowding in libraries (Applegate, 2009; Asher, 2017) and needs for enough power outlets, technology-support services, and stable wi-fi connections for students who increasingly use their own laptops and portable devices in the library (Kim et al., 2021).

Other Informal Learning Spaces

Students value functionality of a learning space more than the aesthetics (Beckers et al., 2016a). In a survey conducted in 23 informal learning spaces of various sizes at University of Victoria, Canada, a medium-sized university in western Canada (Scannell et al., 2016), students perceived a suitable learning space to have low background noise so that they could hear their own conversations but not others nearby. Other important attributes of space reported by students include having adequate lighting and natural light, comfortable temperatures, spaciousness, ample work surface, view of outdoors, as well as access to power outlets, computer devices and equipment, internet, and wireless connections (Beckers et al., 2016a; Crook & Mitchell, 2012; Harrop & Turpin, 2013; Matthews et al., 2011; Wilson & Cotgrave, 2016). Low seating density and some vegetation and soft material are also desirable (Scannell et al., 2016).

To some students, the social ambience is very important; they prefer to study in the open social space within the library (Crook & Mitchell, 2012; Wilson & Cotgrave, 2016) or at a "social learning centre" (Matthew et al., 2011). These students value the opportunities to socialize with friends (Beckers et al., 2016a; Crook and Mitchell, 2012; Harrop & Turpin, 2013; Matthews et al., 2011). As Social Facilitation Theory (Zajonc, 1965)

would suggest, some students found it motivating to work alongside others (Harrop &Turpin, 2013) even if they were not interacting with them (Matthews et al., 2011). Learning spaces with socializing opportunities and higher noise levels tend to be preferred by extraverts (Campbell & Hawley, 1982), and students who are highly agreeable, in art and design, or in their first year (Beckers et al., 2016a).

Still others use coffee shops both on- and off-campus as informal learning spaces, as reported in several studies (Banning et al., 2010; Harrop & Turpin, 2013; Hunter & Cox, 2014; Waxman et al., 2007). Students gather to have food and drink, socialize, relax, read, and study in a relaxing atmosphere, and are motivated by the presence of other students engaging in similar activities. They prefer comfortable and movable furniture, adequate lighting for the tasks, pleasant coffee and food smells, views to the outside, and a warm atmosphere (Waxman et al., 2007). Popular seats were reported to be in quiet corners away from the traffic and sheltered by a wall or a window. Some students use coffee shops as a visit between classes, but others stayed a long time for intense studying (Hunter & Cox, 2014).

In sum, students choose different informal learning spaces for different activities for their perceived effectiveness (Beckers et al., 2016b). Studies of these learning spaces typically use case-study design in which researchers collect data through questionnaire surveys, student diaries, observations, and interviews. Research has focused primarily on students' preferences, their perception and evaluation of the spaces, usage of the spaces, and their social experience within those spaces, and rarely are learning outcomes measured.

## Working for Faculty and Staff

There is extensive research pertaining to the relationships between physical aspects of the office environment, work behaviours and outcomes (Davis et al., 2011; Veitch, 2012) and health and well-being (Colenberg et al., 2021). Indoor environmental qualities have been shown to be important to occupants of corporate offices (Radun & Hongisto, 2023) and to office occupants on campuses. Natural lighting and noise are of particular importance (Kang et al., 2017; Menzies et al., 2019).

Research has generally shown that closed, private offices are more desirable for work that requires concentration than are shared or open-plan offices (Kaarlela-Tuomaala et al., 2009; Radun & Hongisto, 2023). A recent systematic review of field investigations of offices concludes that private offices have the most favourable outcomes that influence organizational productivity, such as social relations, cognitive performance, and work output (Masoudinejad & Veitch, 2023).

Graduate students and research staff are often assigned open plan offices, despite the nature of their work which often requires concentration and focus. Working in an open plan office often results in a trade-off between communication and privacy (Kim & de Dear, 2013). In a UK study, graduate students and research staff who had moved to a newly designed open plan office and those in a traditional office with cubicles were observed. Contrary to the design goal of increasing communication, face-to-face interactions in the renovated office decreased one year later. These occupants reported the lack of privacy and distraction by noise to be problematic (Lansdale et al., 2011). Similar findings were reported in a study of young researchers working in open-plan offices in China (Kang et al., 2017); the occupants were most dissatisfied with the acoustic

environment, and they perceived noise to harm their work productivity. These results are consistent with research findings conducted in corporate offices (e.g., Jahncke et al., 2011).

The activity-based office, a popular design concept in corporations, has been introduced to academia in Europe in recent years (in Sweden, Berthelsen et al., 2018; the Netherlands, Gorgievski et al., 2010; UK, Lansdale et al., 2011). In activity-based offices, workers have no assigned seating, and they move from one space designed to serve one function (e.g., cognitive work) to another space designed for a different function (e.g., face-to-face meetings) as their job tasks require. Although occupants liked the possibilities of meeting people, they were concerned about visual and auditory privacy, security, and storage space, as well as their ability to control the climate and the appearance of their workspace, and to express their identity (Gorgievski et al., 2010; Lansdale et al., 2011). Having control over aspects of the physical work environment (Lee & Brand, 2005) and the ability to establish and personalize a territory have been demonstrated to be important to employees in corporate offices (Wells, 2000). Even though hot-desking policies prohibit occupants from personalizing their workspace (Lansdale et al., 2011), some users occupied the most-desirable workspaces repeatedly by leaving their work or belongings behind to mark their territories (Berthelsen et al., 2018; Lansdale et al., 2011). Consequently, occupants worked more often from home or elsewhere than before (Berthelsen et al., 2018; Gorgievski et al., 2010; Lansdale et al., 2011).

## Health and Wellness

To maintain and promote the physical, psychological, and social wellbeing of campus communities, physical campuses need to be designed for safety and security, ease of navigation, accessibility, physical activities, restoration from stress, social connection, and place attachment.

### Safety and security

Campuses are not immune to crime. Fear of crime and crime on campus can lower the quality of learning and campus life of students (McDonald-Yale & Birchall, 2021). Research in urban environments (Haans & de Kort, 2012) and on campuses (Blöbaum & Hunecke, 2005; Nasar & Fisher, 1993) has shown that people's perception of safety is influenced by three environmental features: prospect (having an overview of the scene), escape (having routes of escape), and concealment (hiding places for offenders). Lighting in their immediate vicinity is important as well (Blöbaum & Hunecke, 2005; Haans & de Kort, 2012).

Women have consistently been demonstrated as experiencing higher levels of fear, perceiving a greater likelihood of being victimized, and engaging in self-protective behaviours more than men do (e.g., Woolnough, 2009). Demonstrating this in a Canadian campus context, respondents were dissatisfied with the lighting and signage on campus, and they took precautions such as planning a route with safety in mind (Fletcher & Bryden, 2007). Similarly, users of a central outdoor campus square identified insufficient night-time/winter lighting as security issue (McDonald-Yale & Birchall, 2021). Campuses located in urban areas may be even more vulnerable to crime. To protect themselves, students in an urban university in the U.S. reported avoiding areas in and around campus buildings, walkways, and parking lots during the day and the night, as well as walking in or with groups (Hignite et al., 2018). These research findings indicate that university administrations should take environmental cues into consideration in the design and management of campus facilities.

*Wayfinding*

Ideally, students, staff, and visitors should be able to orient themselves and navigate around the campus with ease. Getting lost or even disoriented can be frustrating and stressful (Chang, 2013), especially among new students, first-time visitors, those in a hurry, and those with various impairments.

Wayfinding refers to finding your way from where you are to a destination with the use of cues in the environment. It involves developing a plan of action, acting on the plan at the right time and place, and processing information about the environment (Arthur & Passini, 1992; Passini, 1984). Successful wayfinding is dependent on both environmental factors (e.g., spatial layout) and individual characteristics (e.g., spatial ability, prior acquired knowledge) (Jamshidi et al., 2020). An environment can be learned and understood easily (often termed "legible") if it has clear paths, nodes, districts, edges, and landmarks (Lynch, 1960). Environmental legibility and familiarity have significant impact on wayfinding performance and the development of spatial awareness (Li & Klippel, 2016). The degree of differentiation, degree of visual access, and complexity of spatial layout of buildings on a campus can influence how incoming students, who were unfamiliar with the environment, orient themselves spatially and the actions they take to find their way around (Abu-Ghazzeh, 1996). A simple layout (e.g., grid pattern) with different pictorial information about the buildings (e.g., shape) enhanced students' mental representation of the campus (Abu-Obeid, 1998).

In addition to relying on cues from the environment, people turn to maps and signage for help. To be effective, signs should be legible, visible, aligned with the actual environment, and be placed at critical decision-points (Farr et al., 2012). The provision of wayfinding technologies such as mobile applications may improve wayfinding (McDonald-Yale & Birchall, 2021). As an example, the University of Guelph, Canada, a medium-sized university in central Canada, has installed an app-based wayfinding system to help those with visual impairments find their way around campus (Haldenby, 2019).

*Physical activities*

Students and staff are often sedentary when on campus, and physical activity is important for good health. There is some research evidence linking environmental characteristics to sedentary behaviour and physical activities (Karmeniemi et al., 2018; Owen et al., 2000). Campuses can be a convenient physical environment to promote physical activities; students and staff can have access to fitness equipment and classes in their sports and recreation facilities and participate in intramural and other sports on outdoor fields (Leslie, 2001).

Physical activity can also be promoted by making it easy for community members to walk and bicycle on campus (Karmeniemi et al., 2018). In a study of suburban campuses in seven countries, including University of Toronto, a large university in central Canada, Gilson et al. (2009) reported that most of the campuses had good physical infrastructure to support route-based walking, but roadway buffer and cover could be improved. In a study of 13 university campuses in the U.S, Horacek et al. (2018) reported that the higher the campus walkability/bikeability score, the higher the walking intensity of students and the lower their body mass indices. They noted that there needs to be ample space to park and secure bikes to facilitate biking on campus. Yet another way to promote physical activities is to make climbing the stairs up campus buildings easy (Horacek et al., 2014).

*Relaxation and Restoration*

Post-secondary students are exposed to many stressors (Robotham, 2008), and they would benefit from opportunities for stress recovery and attention restoration. There is plenty of research evidence to support attention restoration theory (Kaplan, 1995; Kaplan & Kaplan, 1989) and stress reduction theory (Ulrich, 1991), which argue that exposure to nature is beneficial to health (Berto, 2014; Markevych et al., 2017). Several studies have shown availability of green space on campus to be associated with positive outcomes as perceived by students. In one study (Hipp et al., 2016), students who perceived their campus as greener reported better quality of life than those who perceived their campus as less green, in part due to their perceiving their campus as more restorative. In another study, Gulwadi et al. (2019) demonstrated that objective greenness increased overall quality of life directly, but also indirectly through perceived greenness and perceived restoration.

What features do students perceive as restorative? Students in a study in China (Lu & Fu, 2019) perceived waterfront spaces to have the most attentional restorative effect, followed by vegetation spaces, courtyard spaces, and square spaces. Most students preferred to rest and enjoy the views in the space but about half enjoyed staying and interacting with the space, such as touching plants. Half preferred visiting restorative spaces alone, and the other half preferred to be accompanied. Two-thirds of the students visited restorative spaces at least two or three times a week (Lu & Fu, 2019). Even an artificial view of nature can be restorative. The findings of Felsten's (2009) experiment suggest that installing large nature murals, especially those with waterfall or view of water, in lounges and cafés where students take study breaks may provide them with opportunities for restoration when views of nature are unavailable or limited.

*Social Life*

As the hub for social activities, the student life centre on many campuses houses various amenities and student services—as a 'one-stop shop' or the 'living room for the whole university' (Coulson et al., 2023). In an interview and observational study of the student life centre at two universities, McLane and Kozinets (2019) found that both spatial-design characteristics (e.g., activity hubs near the main entrance, ease of navigation, flexible space usage and furniture arrangement, access to food and drink) and social factors (e.g., high user density) were important in facilitating the formation of a sense of belonging and community identification.

*Multi-purpose Open Spaces*

Many campuses have an open square or squares, often with grassy lawn and surrounded with academic buildings (Coulson et al., 2023). These are often the spaces for social and cultural activities (Gocer et al., 2018), or for time away from others (Painter et al., 2013). In a now classic study, Whyte (1980) observed activities in 18 plazas and found that successful outdoor spaces have adequate seating, sunshine, wind protection, water, and vegetation. The Project for Public Square (2000) identified additional factors for successful outdoor spaces: accessibility (on busy streets), activities, comfort, sociability, and food availability. As an example, in a study of a suburban university campus in Turkey (Gocer et al., 2018), an open courtyard was used the most for leisure and recreation as well as for large-scale campus events, such as concerts. The café and Student Centre within the square were intensively used for activities including standing, sitting, walking, lying down, and running. Passive activities occurred where seating, shading elements, and food and drink were available. The usage

pattern changed over the seasons and across weather conditions, and the duration of stay affected users' sense of comfort. Improvements could be made with the installation of better lighting for the evening, more natural scenery, and adding aesthetically pleasing elements (Gocer et al., 2018).

Comfortable use of outdoor open space in the cold, winter climate on Canadian campuses can be a challenge. In cold climates, warming huts with furniture and vegetation at the right places to maximize sunlight and minimize wind have been recommended (McDonald-Yale & Birchall, 2021).

*Place Attachment*

Place attachment refers to the bond toward a place (Scannell & Gifford, 2010). Such attachment encompasses emotions (e.g., taking pride), cognition (e.g., having good knowledge and fond memories of the place, people, and events), and behaviours (e.g., frequent visits). Both the social and physical qualities of a place are important contributors to the development of such attachment (Scannell & Gifford, 2010).

As students and staff spend time and experience life on campus, they may acquire personal meaning and develop place attachment to the campus (Scannell & Gifford, 2010). In a study in France, students' attachment to the university's neighborhood was related to the time spent in it. The time spent on student activities influenced how much they actively travelled, explored, and gained knowledge about the neighborhood, which in turn led to high attachment (Rioux, 2017). Demographics have a role to play. For example, first-year undergraduates who transitioned from home to university underwent a process to make sense of changes in their socio-spatial environment (Chow & Healey, 2008). Students began to form attachment to the university during their second year, and attachment peaked in the third year of their programme (Spooner, 2019; Sun & Maliki, 2013).

A variety of physical spaces on campus can contribute to place attachment, including dormitories, classrooms and labs, dining halls, and outdoor spaces, libraries, student clubs (Spooner, 2019; Sun & Maliki, 2013). Joining a student organization was a significant event for students to feel a sense of attachment (Spooner, 2019). Students who participated in outdoor recreation activities with their peers or through various campus programmes exhibited a stronger sense of place and attachment to their campus (Miller, 2011). In surveys of students attending universities in southern Ontario, Canada, those living off-campus reported commuting to be a disincentive to participating in extra-curricular activities on campus (Coutts, 2018; Taylor & Mitra, 2021), suggesting that commuting students are less likely to feel attachment to their campus. Place attachment has been shown to be associated with positive outcomes (e.g., happiness at university, Sun & Maliki, 2013).

*Accessibility*

Campuses should be accessible to users of all abilities, yet it is often not the case. In several studies, users with various disabilities reported barriers in accessing facilities on campus; as a result, their mobility and safety as well as access to some learning and socializing opportunities were compromised. For example, older buildings often have stairs leading to the main level of a building, presenting a challenge to users of mobility aids (wheelchairs, walkers, or canes), those with visual impairment, and those with strollers. Ramps are often too steep or slippery and are placed in inconvenient or dim locations (McDonald-Yale & Birchall, 2021; Moritz et al., 2022). Additional barriers for users with mobility-related disabilities may include distance

between buildings; the absence of, location, or size of elevators; poor door design; seat discomfort or seating location; lack of parking spaces (Moritz et al., 2022). Athletic facilities have also been reported as areas that can be inaccessible to students with mobility impairments (Moola, 2015).

## The Future

In this chapter, I have discussed how the physical campus may serve a role in supporting the productivity and wellbeing of a post-secondary community. As we move forward, there are issues surrounding the role of physical campuses that warrant further discussion.

### Is the Physical Campus a Necessity?

With advances in information, communication, and mobile technologies, students can now complete courses and programmes online anywhere, anytime (e.g., at Canada's open online university, Athabasca University). Before the COVID-19 pandemic, many campus-based universities were already experimenting with flipped classrooms and blended learning (Valtonen et al., 2021). Synchronous hybrid learning allows courses to be delivered both on the main campus and at remote locations, creating a more flexible and engaging learning environment than fully online or fully on-site instruction, despite some challenges of pedagogical and technical nature (Raes et al., 2020). During the pandemic, instructors and students were forced to teach and learn online from home. Post-pandemic, online learning continues in some fashion.

So, a natural question to ask, "Is the physical campus necessary any more in higher education?" Some say yes, as the campus is the enabler of human interaction (Coulson et al., 2023); there are no substitutes for multi-sensory, face-to-face interactions. Regardless, learning takes place in a physical place, whether it is the campus, student's home, the workplace, or a coffee shop. Even though some students prefer to study at home for autonomy and comfort, they can be distracted by others or other activities (Beckers et al., 2016b; Solvberg & Rismark, 2012). Moreover, not all students have access to a suitable learning space at home and taking courses from home full-time online has its downsides (Ng, 2021). The closing of the physical campus would exacerbate the inequity of access to high-quality learning space at home, digital resources, and student support services inherently associated with students' social economic and cultural background or identity (Strange & Cox, 2016; van Deursen & van Dijk, 2018).

As with online shopping not replacing on-site shopping and teleworking from home not replacing going to the corporate office, the physical campus will most likely remain but transformed in some ways. For example, time in formal learning space will be reserved for face-to-face discussions and collaboration, and on-campus resources will be available to only those who need or who prefer access. As Leijon et al. (2022) points out, learning spaces in higher education will incorporate both virtual space and physical space as a hybrid learning space.

*Changing Demographics and Lifelong Learning*

In recent years, student demographics have changed, and post-secondary institutions no longer solely serve an 18- to 24-year- population (Usher, 2011; Valtonen et al., 2021). Adults have returned from the workforce to pursue an undergraduate or graduate degree, either for career advancement or for personal interest. Lifelong learning is desirable both for keeping up with the changing requirements of work, and to remain an informed citizen. Most campuses now offer continuing education to members of the public and some are open to high school students (e.g., science summer camp). One question is to what extent campuses will welcome students who are at various stages of life, and how campuses will design spaces to support the needs of different demographics of students (e.g., more childcare centres for student-parents).

*Sources of Funding*

In Canada, public funding provided to post-secondary institutions by provincial governments has been declining for many years (Anisef et al., 2015; Canadian Union of Public Employees, 2019; PressProgress, 2019), even though funding for infrastructure can be provided federally, perhaps indirectly in cases where new facilities are deemed important for economic growth (Anisef et a., 2015). Increasingly, universities and colleges are relying on student tuition to cover operational funding (Anisef et al., 2015). As a result, it is reasonable for students to expect more from their universities in terms of both instructional quality and "university experience"—a "student as customer" attitude—as Coulson et al. (2023) argues. This implies any services should be closed to "customers" only. To compete for "customers", university administrations may be concerned about how satisfaction with physical facilities is related to students' choice of universities (Hanssen & Solvoll, 2015). The corporatization of universities (Brownlee, 2015; Canadian Union of Public Employees, 2019) means that campuses must be increasingly run as business; for example, recreation facilities can be rented to the public for a fee.

*Openness to Public Community*

Related to sources of funding is the issue of openness to the public community. For example, teaching and other physical facilities could be open for use by members of the public with or without a fee, or for community programming. Several art and design universities in Canada have recently been rebuilt with a goal of fostering connections between the universities and their surrounding communities (Wong, 2017). Programming and spaces can be designed to facilitate interactions between generations and to reduce social isolation of older adults (e.g., Vrkljan et al., 2019). As Coulson et al. (2023) puts it, universities are expected to connect more with the community rather than being an "ivory tower" or a gated community.

*Sustainability*

Universities have the responsibility to be leaders in combating climate change. Campus buildings should be designed to be eco-friendly and sustainable. One avenue is to conserve resources through preservation of historical or architecturally significant structures or adaptive reuse of campus buildings (e.g., Browne & McCluskie, 2018; Coulson et al., 2023).

Universities can also focus on environmental education and research, and sustainable practice. For example, in 2010, the University of British Columbia in Canada launched the Campus as a Living Laboratory initiative that used campus buildings and infrastructure as opportunities for research, teaching, and learning of sustainable development. These projects range in scale from small projects conducted by undergraduate and graduate students within their academic curricula or as extracurricular activities to the multi-year design and construction of innovative, sustainable buildings and research facilities, in collaboration with campus operations and administration, community members, and external partners. The vision has been to use the campus as a testbed for new ideas, study the outcomes, and then disseminate the knowledge gained within and beyond the campus. A strong culture of sustainability facilitated by top leadership is an enabler to the success of the initiative, and establishing clear policy objectives and campus-wide goals that are supported by action plans and operational priorities is crucial (Pilon et al., 2020).

A content analysis of sustainability policies of 50 Canadian colleges and universities showed that campus operations were discussed in detail in all policies, but only vaguely with regards to education (i.e., curriculum) and research, and even less frequently in relation to community outreach (Vaughter et al., 2016). No doubt these policies will be further developed and implemented. For universities to respond fully and effectively to the current ecological crisis, Sterling (2021) argues that universities need to first transform themselves from the current educational thinking, policy, and practice to a systemic, holistic, and dynamic way of thinking.

Going forward, we need to cultivate a culture of sustainability on campus and beyond. Beginning at the individual level, every one of us can take responsibility to reduce energy consumption, recycle waste, and reuse materials, adapt space for different functions, preserve nature, persuade others and lead by example. Together with actions taken at the institutional, community, and governmental level, let's hope the outcomes of the climate change crisis will be mitigated.

## Conclusion

In this chapter, I have discussed how physical spaces on campus can support or hinder the productivity and health of students, faculty, and staff, drawing upon theories and empirical evidence. The relationships between the physical environment and behaviours are complex. Space is one contributor to a thriving community, but it is not the magic bullet in effecting changes in behaviours. Learning spaces, for example, can work in conjunction with such factors as pedagogical practice, instructor behaviour, curriculum, student characteristics, and technology, to influence student attitudes and behaviours both directly and indirectly, and perhaps learning outcomes. The best learning spaces are those that are congruent with the curriculum, learning activities, and characteristics of the learners. Advances in technologies, changing demographics, sources of funding, university-community relations, and climate change will influence the role campus space plays in higher education as we move forward.

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## How to Cite

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Malcolm Butler

# Financing Canadian Colleges and Universities in the 21st Century

Malcolm Butler
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## Introduction

I have spent 16 years in academic administration, first as a Dean of Science at Saint Mary's University (4 years), then Dean of Science at Carleton University (7 years), and finally a return to Saint Mary's as Vice-President Academic and Research (5 years). Each role and institution gave me a different perspective on issues around university finance, through both good times and bad. As Dean, I was working in Faculties that were growing and thriving – and where there were means to invest to support that growth. As Vice-President, I worked through COVID, which was a time of crisis for all universities, including mine, with impacts persisting to this day. Each role and institution facilitated contacts with other colleagues, near and far, with whom these perspectives could be discussed and evolved. I was privileged to work with a number of senior leaders, faculty and staff who all cared passionately about their work and helping their university succeed. Now, nearly two years out of administration with time to reflect, this chapter is shaped by my experiences and perspectives, along with ongoing readings, on university finances and the insights shared by those exceptional colleagues.

### Overview: Arriving at the current state

Universities in Canada underwent explosive expansion and growth in the last century, evolving from institutions with strong ties to various religious denominations to largely secular government-supported institutions. Access became a mantra, but with access came expense that, in the early stages, governments were willing to provide support for. This support helped develop a university system (even in the absence of inter-provincial collaboration) where the standard of education is strong across the country, whether a student is attending a large or small university. That standard still exists and should be a source of pride.
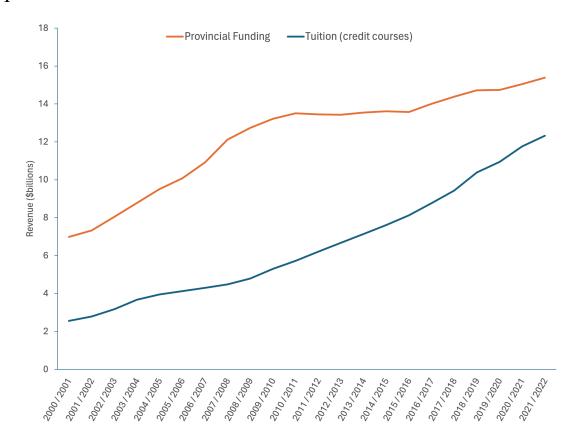
In the latter half of the last century, cracks began to appear in that support. As governments struggled with large deficits themselves and (at times) exceedingly high interest costs on those deficits, they looked to cut back – and universities were a relatively easy target. For those interested, there are a number of books that look back over these times, for example "Growth and Governance at Canadian Universities – An Insider's View" by

Howard Clark (Clarke, 2003) My first direct observation of this was in the 90's and it is clear in hindsight that actions then represented the start down the path to the current predicament.

In the early part of this century, funding was definitely more constrained. Provincial grants were largely fixed with modest (often less than inflation) increases provided each year or, at best, per-student funding was held fixed. In this environment, universities turned to enrolment growth to fill in the gaps. Class sizes grew, and where increased numbers of courses or sections were required, part-time/sessional faculty were hired in increasing numbers to fill the gaps. Concerns began to be raised about the impact of these actions on both the standard of education and those hired in these sessional roles – this was happening across the country at virtually every university. Further, the trend to growing international enrolments began. Originally, international tuition fees were largely calibrated to the "true" cost – roughly the equivalent of (tuition+grant)/student. This changed.

Statistics Canada provides a comprehensive snapshot of funding sources to universities back to 2000/2001 (Statistics Canada, 2023b). We won't analyze those all in great deal here but will note that it is interesting and eye-opening to review the broader picture with time. In Figure 1, we see a comparator of revenue from (for credit) tuition fees and provincial funding in current dollars. There are other sources of operating funds, but they are relatively minor contributions relative to these two. Donations are also interesting to look at, but they rarely offset operational costs.
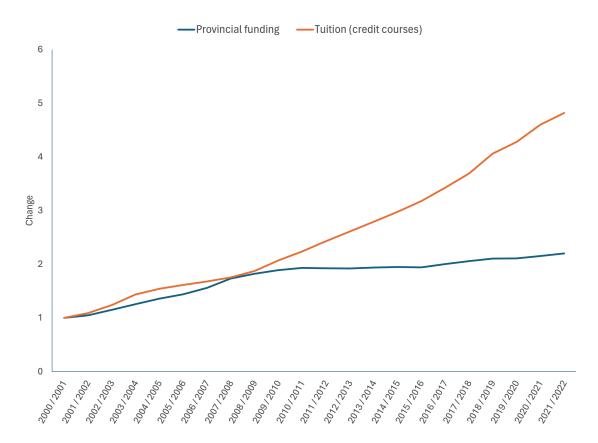
**Figure 1**

*Note.* Comparison of revenue from Provincial sources and credit-based tuition from 2000-2022. Source: Statistics Canada (2023b).

We can see from Figure 1 that there is a steady growth in tuition income throughout the time period shown. Government funding fluctuates, but the growth slows down starting around 2008/09. This becomes clearer when we plot the data using 2000/2001 as a baseline. In Figure 2, you see the trend diverging sharply. Tuition fees are clearly making up a greater fraction of revenue, particularly after 2008. Not only do tuition revenues rise sharply after this point in time, but provincial funding is also virtually flat in current dollars. As we move to the present, the funding model profile looks less and less like a public institution and more like what one sees in the U.S. at private institutions with government subsidy for student aid (Pell grants) – but without the capacity to raise absolute value of and revenue from tuition fees to a level that would be required to fully support the academic missions. This growing disparity helped set the stage for problems universities in Canada are now facing around their finances.

**Figure 2**



*Note.* Comparison of the change in revenue Provincial sources and credit-based tuition using 2000/2001 as a baseline. Source: Statistics Canada (2023b).

In 2020, COVID changed everything, not just in Canada but globally. The chaos we all experienced in the

spring of 2020 has left a mark on the system and we have not recovered, and things will certainly never be the same as they were pre-pandemic (those universities with connections and partner programs in China felt the effects earlier, but largely did not appreciate what this foreshadowed). The most significant impact on university finances was the dramatic drop in international student registrations. The federal government did step in here to help where it could, allowing international students to continue or commence their studies online while still retaining eligibility for the post-graduate work permit (a major draw for international students to Canada) – but the time zone differences, the fact that universities were not really prepared to offer the sophisticated hybrid and/or asynchronous online courses at scale that would have best supported these students, and growing post-secondary capacity in the home countries of these international students all contributed to a decline in international enrolments at many institutions – a decline that most institutions still see today. Some have rebounded to an extent, but certainly not all. The federal government is now taking actions that will exacerbate this, restricting visa access due to explosive growth in numbers pre-COVID and post-COVID at a relatively small number of institutions. This past year has seen constant reporting of large deficits across the country, reserves being exhausted, and layoffs are underway – nearly all laying the blame on declining international enrolments. This coming fiscal year will prove challenging for even more institutions with the new restrictions, further compounded by some provincial governments to tighten funding or tuition controls in such a way that will impact enrolment and overall finances. We all struggle now to understand what the next decade will bring.
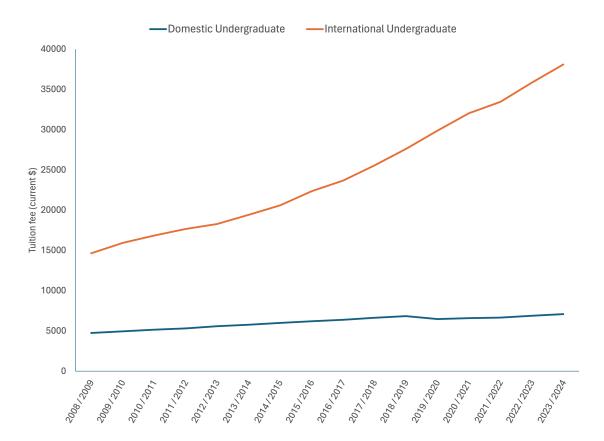
## International Students and University Finances

In earlier times, international fees were set in a spirit of reflecting the "true" cost of their education compared to the subsidized cost for a domestic student. A growth in an appreciation of internationalization and intercultural learning saw these students as bringing intellectual benefits to the university. They would bring different perspectives and backgrounds to the discussion and, should they return home, take with them a deeper understanding of Canada. Most universities still seek this ideal but face increased difficulty in maintaining it as finances are ever more constrained.

Many things influenced the shift in focus on international student recruitment.  One was the realization that there were cohorts of international students seeking advanced post-graduate professional degrees, particularly in business and engineering, and thus there was a growth in targeted programming. These "full-cost" programs spread across the country in the 2000's. Tuitions became driven by the revenue generating opportunities these programs presented, revenue that could in turn support or subsidize other initiatives at the universities. While these revenues are welcome, they are still a relatively small fraction of the overall tuition revenue – which is still dominated by undergraduate student enrolments. International tuition fees for all programs also started increasing alongside these new "full-cost" initiatives, particularly as governments started capping tuition fee increases for domestic students. Many universities introduced dramatic increases to international tuition fees – particularly in undergraduate programs popular with international students, such as business and engineering. Tuition ratios that were once of order 2:1 (international:domestic tuition) became much larger across the country. With that, international tuition fees inevitably became a larger fraction of university revenues with many aspects of the university's operations increasingly dependent on them.
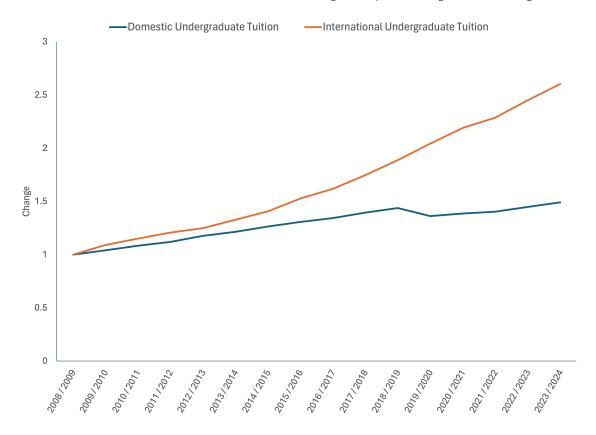
Using further data from Statistics Canada (2023c), Figure 3 illustrates the changing tuition costs in current dollars, domestic vs. international, over time – a national average – from 2008/09 onwards (note that was the

year when tuition and provincial grant revenue increases started diverging rapidly). Here we see universities driving large increases in international tuition fees to offset relatively flat growth in domestic tuition fees. Figure 4 illustrates this further, also using 2008/09 as a reference point. We can see that domestic tuition fees grew by approximately 50% by 2021/22 over 2008/09. International fees, in that same time period, grew by approximately 160% in that same time period. Of course, these ratios vary wildly by program and even by province. For example, in 2021/2022 the Maritime provinces still had ratios of international tuition fees to domestic tuition fees that are of order 2-2.7:1. Québec had the highest ratio in 2021/2022 – over 9:1. That will be changing now as the Québec provincial government has imposed changes in out-of-province domestic fees for the English-language universities. However they might vary, they are all reflective of a trend to extract more revenue from international students, where universities were free from constraints imposed by their provincial governments for domestic students.

**Figure 3**



*Note.* Average tuition fees, domestic vs. international, in Canada from 2008-2022. Note the steep increase seen in international fees in this period. Source: Statistics Canada (2023c).
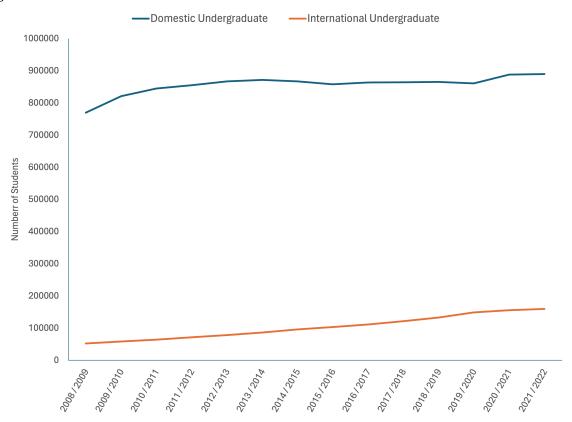
**Figure 4**

*Note.* Highlighting the change in domestic vs. international tuition fees from 2008-2024. Unconstrained by government policy, international fees have more than doubled in current dollars. Source: Statistics Canada (2023c).
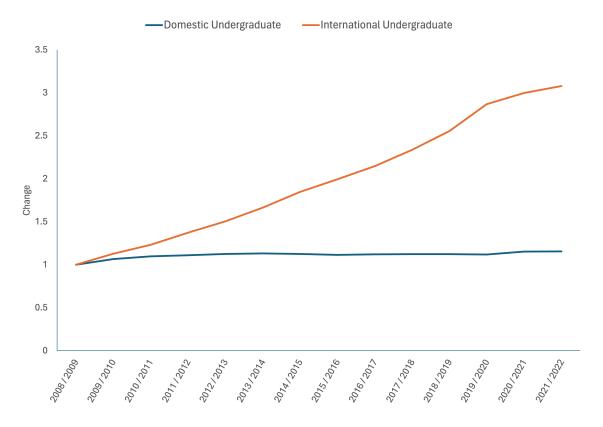
We can compare this to student enrolments over the same time period – where we see dramatic growth in international students, particularly as a fraction of university populations. In Figure 5, Statistics Canada (2023a) data from 2008/09 to 2021/22 is shown for enrolments in bachelor's degree programs at Canadian universities. This is the common tuition revenue generator for universities, large and small, and is usually the backbone of their tuition revenue. Figure 6 shows the relative change in enrolments during the same time period. You can see steady growth in international student enrolment, but that it plateaued in 2020/2021 – the onset of COVID. The continual increases that universities were relying on in their budgets vanished. This has continued post-COVID and, as it was noted earlier, the federal government has taken action to further reduce the number of international students studying in Canada at the undergraduate/diploma level. This has led to a spotlight on international students in Canada that has been in the news these past few months, creating challenges for recruiters in both logistics and perception of Canada as an attractive destination for international students. How these restrictions on international student visas are applied varies by and within provinces. The timing has been challenging relative to the international recruitment cycle, and we are likely to see further negative budget impacts on universities in this new fiscal year. Nonetheless, international students are a much larger fraction of university enrolment than they were pre-COVID (Figure 7), and they have changed universities in Canada in many positive ways. It will be a significant loss for all if a reduction in international student enrolment reduces opportunities for intercultural learning and cross-cultural communications in an ever-smaller global society.
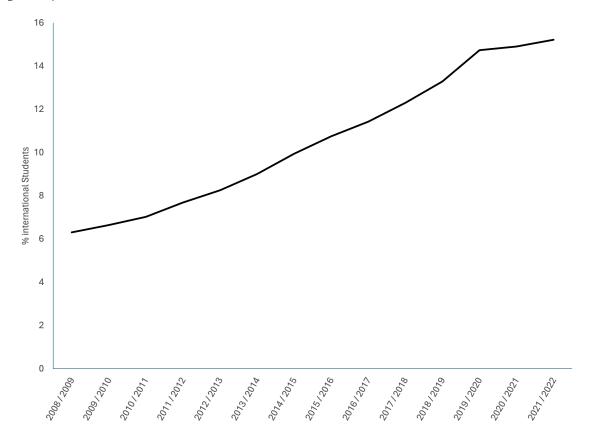
**Figure 5**



*Note.* Domestic vs International undergraduate enrolments at Canadian universities from 2008-2022. Source: Statistics Canada (2023a).

**Figure 6**

*Note.* Relative change in domestic vs. international enrolment in Canadian universities from 2008-2022, with 2008 as a baseline. Source: Statistics Canada (2023a).

**Figure 7**

*Note.* International students as a percentage of the undergraduate population at Canadian universities from 2008-2022. Source: Statistics Canada (2023a).

## International Context

Canada is not alone in facing financial challenges in the sector. Since the spring of 2020, one can hardly open a U.S. higher education new source without reading about another bankruptcy or university in deep budgetary crisis, with either bankruptcy, major reorganization, or even declarations of financial exigency. A recent opinion piece in Inside Higher Ed (Nietzel & Ambrose, 2024) outlines many of the universities, large and small, that had budget crises in 2023. The authors review responses and provide their own thoughts on how universities should be addressing their budget challenges. Universities in the U.K. (PwC, 2024) and Australia (Ross, 2024) are both seeing their governments looking to reduce and restrict international student visas similar to Canada's actions – with the same concerns about impact on university finances being expressed by their leadership. The U.K. and Australia already have a higher level of political influence and control over university operations, and the funding of specific programming, so have already felt the impacts of government policy and priority shifts. International student enrolments may be the next policy shift and would have similar or even greater impacts on finances to what we are seeing here in Canada.

The other challenge Canada faces is the emergence of other competitive players in the post-secondary sector in countries that were previously sources of international students – China in particular. China has seen massive growth in university capacity, even pre- COVID (British Council, 2015) and more key institutions are placing

higher in global rankings (Jack, 2023). China is working to be a destination country for international students, particularly from countries where it already has close ties – but also others.

## What can be done?

Universities are very conservative, by and large – and sometimes smaller universities more so than larger ones.   Change is hard, and slow, but something needs to be done.  There have been experiments with other models – Quest University in Canada, for example, bucked the normal Canadian model, including through course delivery in blocks – where students take a single course at a time but ultimately has failed (Kozelj, 2023) (though not for reasons directly related to education and attractiveness for students). Arizona State University in the U.S. is frequently heralded as an institution embracing radical change, including changing how its academic units are organized to be around grand challenges, rather than disciplines, and embracing access for all with a meaningful emphasis on learning, and more. It is useful to review their website and see how they present their "Enterprise" model for academics and research ([www.asu.edu](www.asu.edu)) – and is interesting to watch how this effort continues to evolve but with a caution that many aspects may not be reproducible for all.

Post-COVID, the expectation was that university education would never be the same. Students would want online education and some larger institutions mused publicly that students wouldn't bother with smaller institutions anymore if they could live at home and get a degree online from a more "prestigious" institution vs. a smaller community-based university.  The radical move online has not come to pass. There are certainly models of successful universities whose presence is primarily online, in Canada and internationally. They were in that space before COVID though, and the rest of the system has largely relaxed back to primarily in-person delivery.  Too often the reaction has been to look at COVID as something to never be repeated, rather than to look at it for examples where true innovation happened and should be nurtured further. Some students, also, have been traumatized by the experience of ad hoc online learning and many don't want to go back there again. Other students, however, thrived and wish there were more opportunities for the flexibility and innovative learning that the online environment supports. To be fair, there is a relatively small group of faculty who want to teach online still for various reasons (not all related to pedagogy) – and the challenge now is how to ensure credible quality as the online teaching during COVID was done in an emergency situation but was not purposefully developed for the online world – going forward, that can't continue.

Even as provincial government funding continues to decline relative to tuition, the demands of governments for accountability are ever increasing, and are sometimes fickle and change with Ministers and governments. This creates an enormous administrative burden for universities to provide more and more reporting and regulatory compliance in return for a relatively smaller contribution to their operating budgets, and a need for professional government relations support to ensure that university priorities and purpose are front of mind for as many key players in government as possible. This too is an international challenge. For example, the U.S. has seen a dramatic increase in regulatory requirements with legal and regulatory consequences, impacting both finances and actions on campus (Guard & Jacobsen, 2024). The challenge is that in modern society, accountability is reasonable to expect, but universities need certainty and for governments to take a longer view of the question of the value of a university to their citizens.

The increasing need for, and expectations of, student services have also created pressures on university

finances. By themselves, increasing and more diverse communities of international students on campus creates the need for services unique to that student population. Given the fees the students pay, universities must be responding to those needs. There are many other enhanced services required addressing needs of the whole student community: enhancing accessibility; mental health support; sexual violence supports; supports for Indigenous students and the response to the Truth and Reconciliation Commission report; and supports for underrepresented and vulnerable student communities to name a few important examples – and there are many others. Few, if any, targeted funds have been directed to universities to fund these supports, which means that universities must find ways to redirect funds that were previously allocated for other purposes. Highlighting the cost  associated with these important initiatives, both external (government) relations and student services wages have been shown recently to have indeed been the greatest factor in the growth of administrative expenses at universities in Canada (Usher, 2024). There, increases are seen to be well over 100% – 167% in the case of external relations, and 133% in the case of student services.[1]

There is no simple path forward – in many ways this is a *very* wicked problem where improvements are possible but absolute solutions are not. No matter what specific path a given university takes, there needs to be much greater understanding and collaboration between the (somewhat artificially) distinct academic and administrative arms of the university in order to navigate these times. Academics must recognize the impact of enrolment on revenue and institutional sustainability and have a reasonable level awareness of the broader challenges of administration posed by government actions. Responsibility lies with both faculty and administrators to both seek out and provide this awareness. Ideally, objective conversations would happen at department/faculty/school levels about the true value and viability of programs, and where cross-subsidization is warranted to support smaller or more expensive programs critical to their core mission – while maintaining overall financial sustainability. There needs to be more engagement of administrative offices with academic bodies to better understand the administrative role in, and impact on, the delivery of the academic mission. Administrative offices will often make changes to processes and policies without context, and without consultation – which can often create unnecessary stress and work, where the same goals could have been achieved in different ways by speaking to those impacted. Universities where these silos can be broken/breached have a better chance of navigating the uncertain waters we face right now and might even find ways to thrive in these times.  Universities that tolerate tension and even confrontation between academics and administrators will not be so lucky and may face major challenges that require drastic actions that are not necessarily guided by their core academic mission.

As part of this engagement between administrative and academic areas, more transparent budget modelling and processes are required. Hanover Research summarizes the strength and weaknesses of a number of budget models at use in colleges and universities (Hanover Research, 2023). This deeper engagement is possible, in principle, with budget models like Activity-Based Budgeting or Responsibility-Centred Management, but for it to work the administration of the model needs to be collaborative.  Academic units need to be able to see and understand the actual cost drivers of their operations relative to revenues, and be given the chance to respond, and be accountable for managing those costs – and to adapt where opportunities exist to reduce those costs. They also need to be able to see the real value and benefit to them of a thriving and diverse student body

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Alex Usher's "One Thought to Start Your Day" blog is especially useful and interesting to follow for anyone interested in university finances, and broader operations. The focus is Canada, but global issues and comparators are frequently brought forward. https://higheredstrategy.com/blog/

not just in the academic life, but in the financial health of their programs. Administrative offices need to be truly accountable that the services they provide are optimized to support the core academic mission and ensure effective and efficient service standards back to the rest of the university community. Overheads, and operating funds cannot simply be "imposed" but rather there must be mechanisms where they are discussed and justified and – as much as possible – agreed to by the revenue-generating academic units. That removes the sense of sole ownership and responsibility of the distinct functions that gets in the way of collaboration and helps to ensure they are working wisely and coherently. These sorts of budget models have been implemented at many universities, but rarely in the fulsome way that allows for true collaborative action to ensure the overall success of the university.

The coming years will be interesting, and worrying, to watch.

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# The Essentiality of Academic Integrity in an Increasingly Disrupted and Polarized World

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## Introduction

There is no question that higher education has been facing growing pressures for change over the past several years (Christensen Hughes, 2024). Many of these pressures have implications for academic integrity, not just with respect to student academic misconduct (as the term is often narrowly applied), but also with respect to faculty and administrative priorities and practice. In this chapter I argue that it is essential that these pressures and their implications for academic integrity be more fully considered and that a multi-faceted recommitment to integrity be made.

This chapter begins with a review of some of the most daunting pressures for change being experienced within higher education today. Implications for integrity are raised. Next , I present definitions of academic integrity and provide several frameworks for helping guide the work of administrators and faculty towards its achievement. Following, I provide evidence that suggests while we lack comprehensive data on misconduct by faculty and administrators, student academic misconduct may be increasing. I conclude with some suggestions for what academic leaders can do, to enhance integrity within Canadian higher education institutions.

## Pressures for Change

### *Covid-19 and the Rise of Digital Learning*

One of the most significant, recent disruptions to higher education has arguably been the Covid-19 pandemic. Beyond concerns with the appropriateness and adequacy of campus health and safety policies (e.g., masking, ventilation, vaccine mandates etc.), has been the ostracization of scientists with "dissenting opinions" (Liester, 2022, p. 53), testing the limits of academic freedom and tenure. Also, as campuses and residences shut down, there was the rapid pivot to on-line learning and assessment. The use of online proctoring technologies

has raised "ethical notions of academic integrity, fairness, non-maleficence, transparency, privacy, autonomy, liberty, and trust" (Coghlan et al., 2021, p. 1581).

A survey by the Canadian Digital Learning Research Association (CDLRA) (Irhouma & Johnson, 2022), asked respondents about "the most pressing challenges at their institution related to teaching and learning" (p. 7), as pandemic restrictions were winding down. The "top five challenges were faculty fatigue and burnout (74%), effective assessment practices (61%), effective teaching practices for teaching online (59%), faculty digital literacy (55%), and student fatigue and burnout (50%)" (p. 7).

Despite these challenges, the CDLRA survey also identified an "increased desire for flexible learning opportunities" (p. 25), with Irhouma and Johnson (2022), noting that "scaling back on opportunities to learn fully or partially online limits accessibility" (p. 1). The authors also cautioned, however, that more support was needed, in "technological infrastructure, funding, administrative support, and training to enhance faculty digital literacy" (p. 7).

Effective higher education institutions of the future will be those that challenge the dominant assumption that all students can and should be physically present on campus, as well as the assumption that faculty (by virtue of having a PhD) have the requisite skills for their on-line teaching and assessment responsibilities. Staff who design and support online learning, need to be more fully respected for their expertise and better supported in their essential roles. Concern and support for mental health challenges – of faculty, staff and students – are important additional ethical considerations.

### Generative AI and Questions Concerning the Relevance of Higher Education

Relatedly, is the double-edged sword of Generative AI (GenAI) (Berdhal & Bens, 2023) and other advanced AI technologies, that are providing incredible opportunities but are not without risk.

> Technology can be an awesome force for good...But today's AI-powered tools and other emerging technologies can also affect humans in harmful ways—some fuel bias and discrimination, spread disinformation, disregard intellectual property rights, threaten privacy, power autonomous lethal weapons, or possibly pose existential threats to humanity. and integrity (D'Agostino, 2023).

ChatGPT, launched in the fall of 2022, presents a significant challenge to the integrity of traditional university learning assignments, with its ability to instantly synthesize copious amounts of information and produce readable, customizable content, in multiple languages. It can also be used for analysing data sets; producing creative work, such as pictures, songs, poems and videos; writing code; and even evaluating content. We now have the situation where students can submit a personal post or a fully developed paper, and faculty can submit a grade, with neither having actually read the work!

A related concern is the growing obsolescence of what students are expected to learn. A recent study by OpenAI (2023) suggests that occupations which depend on numeracy, programming and writing skills, such as mathematicians, analysts, writers and authors, are most vulnerable to having core elements of their work replaced by AI. Occupations found to be most immune were those requiring a high degree of critical thinking skills. This has important implications for what students should be learning and "how that learning should be

facilitated and assessed" (Christensen Hughes, 2023). Large, lecture-based classes combined with assessments that test for recall are becoming increasingly irrelevant. Small classes (in person or online), with applied, skills-based learning activities, which incorporate regular, formative feedback, are what is needed to help students develop a host of 'future proof' transferable skills.

In summary, where and what students are learning, how they are being assessed, and the capacity of the faculty to effectively facilitate that learning, is arguably a question of institutional relevance and integrity. Resourcing the innovation being called for is challenging, given long-held institutional funding priorities and strained institutional budgets.

### Strained Budgets and Growing International Student Enrolments

Many universities and colleges are experiencing budgetary strain, amidst rising costs and reduced revenues. In Ontario, a Blue-Ribbon Panel recently reviewed the financial sustainability of the sector, recommending increases in tuition and operating grants. Following the release of the Panel's report, Steve Orsini, CEO of the Council of Ontario Universities (COU, 2023), stated; "The situation is becoming increasingly untenable, as universities can no longer continue to absorb cuts and freezes amidst rising inflation and costs, and many are facing deficits, with the growing risk of insolvencies." Proving his point, several Ontario universities have recently announced staggering operating deficits, such as Queen's University, at over $60 million dollars (Evans, 2023).

As one solution to this problem, higher education institutions have pursued growth in international student enrolments. While credible, life transforming opportunities for international students do exist, in alignment with Canada's immigration priorities, fraudulent activity and sub-standard student experiences are also occurring. Federal Immigration Minister Mark Miller, recently announced changes to the rules concerning international student visas, threatening caps, if conditions don't improve: "There are, in provinces, the diploma equivalent of puppy mills that are just churning out diplomas, and this is not a legitimate student experience"… "There is fraud and abuse and it needs to end" (Canadian Press, 2023).

Universities and colleges need to pursue new revenue opportunities in ethical ways, ensuring all students receive a quality learning experience and meaningful support.

### Research and the Pursuit of Truth

The role of the academy as arbiter of 'truth' has also come under question, with faculty research increasingly being found wanting – both for its perceived lack of social relevance (Hoffman, 2016) including weak support for the UN's Sustainable Development Goals (Nature, 2023), as well as for its untrustworthiness (Christensen Hughes & Eaton, 2022).

According to a recent report in *Nature*, over 10,000 academic papers were retracted in 2023, a new record (Van Noorden, 2023). *Retraction Watch*, a not-for-profit organization which has been bringing attention to retracted scientific papers since 2010, has over 50,000 papers in its searchable on-line data base (Retraction Watch, n.d.a),

including hundreds concerning the Covid-19 pandemic (Retraction Watch, n.d.b). Of those with a Canadian university affiliation, the reasons for retraction include (Retraction Watch, n.d.a):

> Error in Analyses, Error in Results and/or Conclusions, Error in Image, Concerns/Issues About Authorship, Concerns/Issues about Third Party Involvement, Fake Peer Review, Unreliable Results, Concerns/Issues About Data, Concerns/Issues About Results, Manipulation of Images, Duplication of Image, Concerns/Issues about Referencing/Attribution.

Articles highlighting these types of misconduct are becoming more common. As one example, Matusz, Abalkina and Bishop (2023), recently wrote an editorial, in *Mind, Brain and Education (MBE)*, reporting that credible scientific journals are increasingly being targeted and fooled by unscrupulous and sophisticated paper mills, resulting in the publication of work that may include: purchased co-authorships and citations; AI enabled ghost writers; fraudulent peer review; collusion with editors; and "scientific misconduct, including plagiarism, falsification, and fabrication" (Matusz et al., 2023).

In our so called 'post-truth' world (Calcutt, 2016), it is essential that society has confidence in the scholarly output of faculty.  Scientific integrity is under threat. This assault needs to be addressed with great urgency.

### Declining Public Confidence: US

Perhaps not surprisingly, public confidence in higher education appears to be declining, particularly in the US and particularly amongst Republicans (see for example, Wright Dziech, 2023).  A recent Gallup poll (Brenan, 2023), found that:

> Americans' confidence in higher education has fallen to 36%, sharply lower than in two prior readings in 2015 (57%) and 2018 (48%). In addition to the 17% of U.S. adults who have "a great deal" and 19% "quite a lot" of confidence, 40% have "some" and 22% "very little" confidence…Republicans' sank the most — 20 points to 19%, the lowest of any group.

One contributing factor has been its cost. A recent poll by the Wall Street Journal, in collaboration with the University of Chicago's "non-partisan research group (NORC)", found that over half (56 percent) of respondents agreed, "a four-year college education is not worth the cost because people often graduate without specific job skills and with a large amount of debt to pay off" (Lederman, 2023). This was up markedly from 40 percent, just ten years ago.

Another criticism has seen the media target 'left leaning' faculty, with arguments increasingly being made that university leaders are prioritizing personal political agendas, valuing equity over excellence; pandering to student emotions; cancelling courses, speakers and even faculty who students find "triggering"; and allowing unruliness, when unpopular ideas are presented, preventing meaningful debate (Zakaria, 2023).  Relatedly, bills to limit Diversity, Equity and Inclusion (DEI) initiatives have been introduced in several Republican states (Asmelash, 2023).

Jonathan Haidt (2016), Thomas Cooley Professor of Ethical Leadership at the New York University Stern School of Business, has argued for several years that there has been growing tension on American university campuses between "Telos" or "truth" on the one hand and "social justice" or DEI initiatives, on the other (p. 2).

In presentations and blog posts, Haidt has suggested a growing "culture of victimhood" has resulted in a state of "moral dependency" and "fragility" amongst students, in which challenging ideas and even select words have become viewed as "violence" (p. 5).

This type of challenge has come into sharp relief, following the brutal October 7th terrorist attack on Israel by Hamas, the war that continues, and the pro-Palestinian protests and antisemitism (hate speech, threats of violence) that has grown precipitously on many American university campuses (Center for Antisemitism Research, 2023).

Concerned, the US Congressional *Education and Workforce Committee* called for the sworn testimony of the presidents of Harvard University, Claudine Gay, the University of Pennsylvania, Elizabeth Magill, and the Massachusetts Institute of Technology (MIT), Sally Kornbluth on what they were doing to protect their Jewish students (see C-SPAN2-1 and C-SPAN2-2, 2023).

While the presidents strongly condemned antisemitism and shared plans for doing a better job of combatting it, they also argued that the competing goals of "safety" and "free expression" are difficult to balance. This was challenged by expert witness Pamela Nadell, American University, Jewish Studies Program Director; "free speech stands at the core of the liberal arts education...but free speech does not permit harassment, discrimination, bias, threats or violence in any form" (C-SPAN2-1).

Committee member Rep. Tim Wallberg suggested that Harvard's commitment to free speech was "selective", citing instances where Harvard faculty had been fired, or forced to resign, when their views were at odds with "campus orthodoxy". Several house speakers cited Harvard's last place standing on a *Foundation for Individual Rights and Expression* (FIRE), College Free Speech Ranking (Stevens, 2023).

In response to a series of questions on whether calls for Israeli genocide (*Intifada Revolution*) would violate her university's code of conduct and harassment policies, the president of Harvard stated that while she found such calls "personally abhorrent", the situation was also "contextual", and that students wouldn't be sanctioned unless the speech was directed at particular individuals and there was "conduct that violates policies". She claimed, while "there's no place at Harvard for antisemitism...we do not sanction individuals for their political views or their speech." A similar legalistic stance, citing First Amendment rights, was reiterated by the other presidents (see C-SPAN2-3, 2023).

In the US, hate speech is largely considered "protected speech under the First Amendment" (Moon, 2008, p. 85). Legal opinion, however, suggests that US universities are not prohibited from imposing stricter expectations on hate speech, as some have:

> Sensitivity about such speech has grown on many college campuses, public as well as private, and some universities have adopted restrictive guidelines. Many people believe that educational institutions, even those of the state, can set higher levels of civility and respect than the society at large. (Greenawalt, 1992, p. 20)

At the inquiry, in which it became clear that the three presidents had not moved to restrict hate speech on their campuses, Co-Chair Rep. Virginia Foxx concluded:

> Post-secondary education has never been held in such low esteem in our country as it is today.  I do not refer to colleges and universities any longer as higher education because it is my opinion that higher order skills are not being taught and learned.

She also suggested that the challenge of dealing with antisemitism was heightened, given that it was being carried out by those who "think of themselves as virtuous" and hatred as "righteous" (see C-SPAN2-2, 2023).

Condemnation of the presidents' testimony on social media was swift.  As one example, outspoken Harvard Alumnus Bill Ackman (2023), stated "The presidents' answers reflect the profound educational, moral and ethical failures that pervade certain of our elite educational institutions due in large part to their failed leadership."  Calls for the resignation of the three presidents followed, with Elizabeth Magill stepping down shortly after. In a video address, she acknowledged that the University's policies needed to be reviewed; "In today's world where we are seeing signs of hate proliferating across our campus and our world…the policies need to be clarified and evaluated" (Penn, 2023).The Congressional Committee also announced it would be launching a formal investigation into the three university's "learning environments" and "policies and procedures" (Borter, 2023). Calls for Gay's resignation also intensified, along with reports in the media that she had allegedly plagiarized several passages in her doctoral dissertation and other published work (Walker, 2023).

## Confidence in Canadian Higher Education: High but Declining

Laws concerning freedom of expression (in Canada) and freedom of speech (in the US) differ.  Within Canada, several laws, including the Canadian Criminal Code and Human Rights legislation "prohibit hateful statements", which have been "upheld as justified limits on freedom of expression" (Moon, 2008, p. 85).

Regardless, an increasing number of antisemitic incidents have been occurring in Canada, including on university campuses, with four Canadian universities – UBC, Queen's, TMU and York – facing class action lawsuits due to alleged failure to follow "non-discrimination policies" or to provide "sufficient training on handling harassment" (CBC, 2023).

At McGill, the Student Society (SSMU) held a referendum, with almost 80% voting in support of a proposed policy which called for the University's administration to "condemn a 'genocidal bombing campaign' against Gaza and cut ties with 'any corporations, institutions or individuals complicit in genocide, settler-colonialism, apartheid, or ethnic cleansing against Palestinians'" (The Canadian Press, 2023).

Following a court challenge by a Jewish student, the Quebec Superior Court temporarily blocked the 2023 referendum, and the SSMU agreed to suspend its ratification until a hearing in March. B'nai Brith Canada criticized the University for failing to support Jewish students:

> It is sad that a student had to go to the courts for justice on this issue because the university has repeatedly failed to hold its student associations accountable for breaking their own rules…McGill does not have to wait until then to do the right thing. (The Canadian Press, 2023)

At some universities, however, concrete action has been taken. At York, for example, several faculty and staff were placed on leave, after they were charged for allegedly vandalizing an Indigo bookstore in Toronto. Three

student groups were also sanctioned for a joint statement claiming the October 7th atrocities were "an act of Palestinian resistance against 'so-called Israel'" (Hager & Fine, 2023).

The University of Toronto has been applauded for its commitment to ensuring that student groups do not act in violation of university policy (B'nai Brith Canada, 2022). Following a protracted review, the University's Graduate Student Union (UTGSU) was found to have acted inappropriately, restricting – on the basis of belief – who could join its Boycott, Divestment, & Sanctions (BDS) caucus, while continuing to impose fees on all UTGSU members. Provost Cheryl Regehr announced she would be withholding funding from the society (UofT News, 2022).

The BDS, also mentioned during the US Congressional hearing, is a well-funded global coalition, founded in 2005 and "endorsed by over 170 Palestinian political parties, organizations, trade unions and movements" (Canadian BDS Coalition, n.d.). There are many Canadian student unions and associations listed on the BDS member site, representing well over a million Canadian students (BDS HUB, n.d.).

Given that tensions are likely to further escalate, it is essential that all Canadian institutions are clear that while they are supportive of freedom of expression, that hate speech has no place on Canadian university campuses, and that all students and staff have the right to study and work in an environment free of threat and harassment.

It is unclear to what extent, if any, these recent incidents may be impacting Canadian's perception of higher learning. Canadian universities and colleges have traditionally enjoyed the confidence of the public. In fact, according to a Nanos (2023) poll, they are perceived as the most valuable social institution in the country, with a mean score of 7.3 out of 10, albeit down from 7.9 in 2021.

That does not mean, however, that Canadians are fully satisfied with the country's higher education system, particularly with respect to what is being taught. A recent Leger (2023) survey found that:
- "Canadians believe that universities and colleges need to teach more practical and career-focused skills (83%)".
- "[T]hree-quarters of Canadians (73%) believe practical work experience is becoming more important than education."
- Problem solving, adaptability, and digital literacy "are the top skills Canadians believe will become more important in the future".
- "Judgement/decision making, people skills, and resiliency are also viewed as abilities/skills that will become more important".
- "Canadians say 42% of post-secondary education should be provided by industry (e.g., businesses, professionals, associations), while 58% should be provided by educational institutions."

It is within this complex, ever-changing, and increasingly polarized context, that academic integrity needs to be better understood and strengthened. I now turn to definitions of academic integrity and frameworks that are aligned with this essential pursuit.

## What is Academic Integrity and Why is it Essential?

The term *academic integrity* began to receive focused attention in North America in the late 1990s, supported in large measure by the International Center for Academic Integrity (ICAI), co-founded by the "father of research on academic integrity" the late Don McCabe (McCabe, 2016). Don had been conducting surveys on student academic misconduct across the US, since the early 1990s. I reached out to Don in the early 2000's, and together we conducted the first multi-institutional survey on academic misconduct by higher education students in Canada (see Christensen Hughes & McCabe, 2006a, 2006b).

I also began to attend ICAI conferences and was particularly inspired at one by keynote speaker Thomas Lickona, author of *Educating for Character: How our Schools can Teach Respect and Responsibility* (1991). Lickona made the case for explicitly (re)introducing values to education at all levels. Lickona argued there had been a dramatic decline in ethical behaviour in American society including amongst the young. He argued that democracy depended on a shared sense of morality. Citing Theodore Roosevelt, Lickona offered, "To educate a person in mind and not in morals is to educate a menace to society" (p. 3).

The ICAI's stated mission was to "promote academic integrity and ethics in schools and in society at large" (ICAI, 2021, p.3). Don McCabe and the other founders recognized that integrity was essential to the work of the academy – "teaching, learning, research and service" – yet "scholarly institutions rarely identify and describe their commitment to the principles of integrity in positive and practical terms (p. 4). The ICAI defined academic integrity as "A commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect and responsibility" (ICAI, 2021, p. 4). In 2014, a sixth value, courage, was added.

Similar to the ICAI's definition are the *Seven Sacred Teachings* or *Seven Grandfathers,* fundamental to several Indigenous peoples in Canada. These teachings provide "a foundation for personal responsibility...demonstrate[ing] the interconnectedness of one's actions with the lived environment..." (Maracle, 2020 , para. 2). The seven values include: respect, bravery, honesty, wisdom, humility, truth, and love. Over the past several years, and in keeping with Canada's commitment to *Truth and Reconciliation,* educational resources built off these values have been developed, both as a framework for understanding academic integrity (Maracle, 2020) and for living a moral life (Bouchard et al., 2023). Today, both the *ICAI's values* and the *Seven Sacred Teachings* can be found on the websites of schools, universities and colleges across Canada.

I have long argued that integrity is absolutely essential to the work of the academy and its continued, privileged position of trust in society (Eaton & Christensen Hughes, 2022, p. xiii):

> Academic integrity...is—and must be—at the core of our purpose, practice and the products of scholarly work. The degrees we confer (and the knowledge, skills and values they are supposed to represent) and the truths we disseminate (through research with integrity), must be beyond reproach.

Given recent events, I would add that ensuring freedom of expression, alongside the emotional and physical safety of our students, faculty and staff, are essential additional dimensions. Yet criticism of the academy's commitment to these ideals appears to be growing. If administrators and faculty are not bringing the highest levels of integrity to their own roles – consistently exhibiting a strong moral compass – it is hard to imagine that students would.

## Frameworks of Integrity for Faculty and Administrators

The implications of a full commitment to academic integrity are far-reaching, particularly for faculty and administrators. This includes upholding the central tenet of academic freedom. Universities Canada's (2011) acknowledges academic freedom is "fundamental to the mandate of universities to pursue truth, educate students and disseminate knowledge and understanding", and also that "academic freedom must be based on institutional integrity, rigorous standards for enquiry and institutional autonomy...".

Dea (2019) articulates the implications of academic freedom for the role of tenured faculty:

[C]onducting scholarship honestly, ethically, and according to the standards of your discipline or subdiscipline. That means performing your assigned teaching duties, grading student work fairly, subjecting one's work to peer review, reporting research results honestly, properly crediting other scholars' contributions, being careful not to misrepresent one's own expertise or position (for instance, being clear that one's extramural expression does not represent one's university), and so on.

While Dea's focus on honesty and ethics in scholarly work is welcome, her treatment of teaching is arguably more narrowly focused, reflecting quite traditional – and insufficient – expectations.

Over twenty years earlier, a much more extensive list of *Ethical Principles and Professionalism in University Teaching* (Society for Teaching and Learning in Higher Education, 1996) was developed, as "a set of basic ethical principles that define the professional responsibilities of university professors in their role as teacher" (p. 1). These principles included:

**Principle 1: Content Competence** ("course content is current, accurate, representative, and appropriate...consistent with stated course objectives") (p. 1);

**Principle 2: Pedagogical Competence** ("selects methods of instruction, that according to research evidence...are effective in helping students to achieve the course objectives...[and, for mastery based assignments] provides students with adequate opportunity to practice and receive feedback") (p. 2);

**Principle 3: Sensitive Topics** (deals with potentially sensitive topics "in an open, honest, and positive way") (p. 2);

**Principle 4: Student Development** ("instruction that facilitates learning and encourages autonomy and independent thinking...[treating] students with respect and dignity) (p. 2-3);

**Principle 5: Dual Relationships with Students** ("does not enter into dual-relationships with students...[and avoids] actual or perceived favouritism") ( p. 3);

**Principle 6: Confidentiality** ("student grades, attendance records, and private communications are regarded as confidential materials, and are released only with student consent, or for legitimate academic activities") (p. 3);

**Principle 7: Respect for Colleagues** ("respects the dignity of her or his colleagues and works cooperatively with colleagues") (p. 4)

**Principle 8: Valid Assessment of Students** ("assessment of students is valid, open, fair, and congruent with course objectives"; is aware of research "on the advantages and disadvantages of alternative methods of assessment...the teacher selects assessment techniques...as reliable and valid as possible" and "by means appropriate for the size of the class, students are provided with prompt and accurate feedback on their performance at regular intervals throughout the course...an explanation as to how their work was graded, and constructive suggestions as to how to improve") (p. 4);

**Principle 9: Respect for Institution** ("a university teacher is aware of and respects the educational goals, policies and standards of the institution in which he or she teaches" (p. 5).

These principles have been adopted by several Canadian universities, and in fact have been taught as part of faculty development activities (see for example, *Ethical Principles and Professionalism in University Teaching*, n.d., Queen's University). In my experience, however, they are worthy of much more attention than they have received. Given the pressures for change previously reviewed, these principles may be more relevant now than they have ever been.

Ethical principles have also been articulated for university leaders. In the US, one example is provided by the American Association of University Administrators (AAUA, 2017). An abbreviated version follows:

- "We commit to the highest level of integrity. Honest behavior is the key to establishing trust among those with whom we work..."
- "We uphold the values of fairness and equity. We welcome and encourage diverse perspectives and respect the dignity of all individuals..."
- "We strive for accuracy and transparency. Information is the lifeblood of our profession..."
- "We respect confidentiality and protect the privacy of information..."
- "We support the missions of our institutions... In all situations we demonstrate professional judgment and respond in ways that meet the highest standards of our profession."
- "We actively seek support when concerned about an ethical issue..."
- "We raise our voices when the ethical standards of our profession are not being upheld...We act with moral courage, even in the face of risk, danger, or fear."
- "We pursue professional opportunities to acquire new ethical knowledge and practices...to increase our awareness and knowledge of ethical best practices and emerging ethical issues."
- "We actively promote and disseminate these Principles. We have a responsibility to promote ethical conduct within our profession..."

While I could not find any similar overarching statement of a commitment to integrity by Canadian university leaders, multiple commitments have been made towards advancing specific initiatives that arguably have principles of integrity at their core. For example:

Universities Canada's commitments to Truth and Reconciliation (Universities Canada, 2023):

Universities commit to advancing truth as a step toward reconciliation. This includes acknowledging their role in colonialism and the legacy of residential schools in education in Canada...Universities commit to developing opportunities for Indigenous students, faculty, researchers, staff and leaders at

every level of the institution through governance structures, policies, and strategies that respect and make space for Indigenous expertise, Knowledges and cultures.

Universities Canada's commitment towards the Scarborough Charter (Universities Canada, 2021a):

a commitment to take concrete, meaningful action to address anti-Black racism and promote Black inclusion in Canadian higher education…Universities Canada members are committed to advancing equity, diversity and inclusion and addressing all forms of systemic racism on our campuses and in our communities.

Canada's universities' commitments to Canadians (Universities Canada, 2021b):

We prepare all students with the knowledge and competencies they need to succeed in work and life, empowering them to contribute to Canada's social, economic, and cultural vitality…Universities commit to improving accessibility to higher education for all Canadians…We deliver enriched learning experiences that meet the ever-changing needs of students, the workforce, communities and broader society…Canada's universities pursue and support more ground-breaking research than any other economic sector, for the benefit of Canada and the world.

The U15 Group of Canadian Research Universities (2023) has also developed *Safeguarding Research in Canada: A Guide for University Policies*, in response to concerns "that some foreign entities are seeking to exploit and misuse the very openness and inclusivity that drives our success and world-class performance" (p. 1). They articulate the following values for "safeguarding research at Canadian institutions" (p. 2):

1. Integrity: as a core principle for researchers and institutions
2. Respect: for academic freedom, open-science and diverse and inclusive campus environments
3. Trust: across funders, partners, governments, and universities
4. Resilience: in developing policies and practices to safeguard research and advance research activity
5. Compliance: with all relevant laws, regulations, and ethical standards related to research security.

In summary, there are many frameworks that underscore the essentiality of integrity to the work of the academy, including faculty and administrators, with numerous commitments having been made. The ones reviewed here relate to academic freedom, integrity in scholarship, ethical teaching practice, transparent leadership, Truth and Reconciliation, anti-Black racism, accessibility, and the relevance of what students are required to learn. Higher education in Canada is highly regulated, with many checks and balances aligned with these expectations, including institutional codes of conduct amongst other policies and regulations.

Given all the disruptions occurring in the broader context, however, and important questions being raised, any accomplishments or progress to date towards these types of frameworks and commitments should not be taken for granted. What is missing, is a comprehensive assessment of our success in living up to these ideals, with input from those we are intended to serve. Research that does exist has tended to focus on academic misconduct by students. And that research suggests that while most students may be approaching their work with integrity, there is growing reason for concern.

## The Growing Prevalence of Student Academic Misconduct

Academic misconduct is generally defined as "anything that gives a student an unearned advantage over another" (Mullens, 2000, p. 23). In 2006, Don McCabe and I published two papers in the *Canadian Journal of Higher Education* (Christensen Hughes & McCabe, 2006a, 2006b) on the topic. The first was a literature review demonstrating the growing prevalence of student academic misconduct in the US, as well as an exploration of its causes. Based on this review, we provided recommendations for minimizing its prevalence, including (Christensen Hughes & McCabe, 2006a, p. 49):

1. Revisiting the goals and values of higher education

2. Recommitting to quality in teaching and assessment practice

3. Establishing effective policies and invigilation practices

4. Providing educational opportunities and support for all members of the university community

5. Using (modified) academic honour codes

Our second paper reported the results of the first multi-institution Canadian study, carried out between 2002 and 2003. Over 16,000 students (undergraduate and graduate) completed surveys, providing self-reported data about their views and participation in 25 questionable behaviours (Christensen Hughes & McCabe, 2006b). Several thousand Faculty and TAs were also surveyed on their perceptions and behaviours.

The top three behaviours students reported participating in, at least once in the past year, for written assignments, were (Christensen Hughes & McCabe, 2006b, p. 13):

- Sharing an assignment with another student so they have an example to work from (66% undergrads, 52% grads)

- Working on an assignment with others when the instructor asked for individual work (45% undergrads, 29% grads)

- Copying a few sentences of material from a written source without footnoting them in the paper (37% undergrads, 24% grads)

For tests and examinations, the highest rates were (Christensen Hughes & McCabe, 2006b, p. 13):

- Getting questions and answers from someone who has already taken the test (38% undergrads, 16% grads)

- Helping someone else cheat on a test (8% undergrads, 4% grads)

- Copying from another student during a test with his or her knowledge (6% undergrads, 3% grads)

Most respondents (students, faculty and TAs) viewed the most common of these behaviours (i.e., "sharing an assignment with another student so they have an example to work from") as "not cheating" or "trivial cheating" (Christensen Hughes & McCabe, 2006b, p. 9). Most students (but not the majority of faculty or TAs) also considered "working on an assignment with others when the instructor asked for individual work" and "receiving unpermitted help on an assignment" as not cheating or trivial cheating. And, most undergraduate students (not graduate students, faculty or TAs) considered "getting questions and answers from someone who has already taken the test" as "not cheating" or "trivial cheating".

Behaviours reported by fewer students, but arguably concerning to the integrity of the academy included (Christensen Hughes & McCabe, 2006b, p. 13):

- Fabricating or falsifying lab data (25% undergrads, 6% grads)

- Fabricating or falsifying a bibliography (17% undergrads, 9% grads)

- Turning in work done by someone else (9% undergrads, 4% grads)

Amongst the lowest reported self-reported behaviours were:

- Turning in a paper obtained in large part from a term paper "mill"/web site that did not charge (2% undergrads, 1% grads)

- Damaging library or course materials (2% undergrads, 2% grads)

- Turning in a paper obtained in large part from a term paper "mill"/web site that did charge (1% undergrads, 0% grads)

In the thousands of open-ended responses, students justified their behaviours, reporting for example, that they learned more when they "collaborated" (Christensen Hughes & McCabe, 2006b, p. 15). They also criticized what they perceived as a lack of institutional commitment to following policies and practices that discourage cheating. As examples, students wrote (Christensen Hughes, 2017):

> If there was more supervision and we felt we couldn't we wouldn't. We basically know there is a very good chance we will get away with it. (p. 44)

> As much as it pains me to say, if you eliminate hats during exams, that would be the right step. (p. 44)

> I find that even when people are caught cheating during a test or examination, they are often just told to stop. The measures that are supposed to be taken are not taken. I think this leads to the attitude some people take that cheating is not a big deal. (p. 49)

> To be honest, I really don't know the penalties of cheating, and maybe that's why I have no problem looking at another student's multiple-choice answers when I get a chance. (p. 52)

Students also challenged the type of assessments they were given, arguing that they did little to enhance their learning. As examples (Christensen Hughes, 2017):

> As long as universities are not about learning, students will cheat...Are assignments given to teach the students the material, or are assignments given to determine what the student will get as a mark? There is only one primary purpose. 'Cheating' allows the student to get a better mark. (p. 55)

> Students DO NOT COME TO SCHOOL TO LEARN...we come because a university education is deemed socially and economically necessary...We have been brain washed into a game, whereby we memorize vast amounts of material, regurgitate it onto paper in a crowded room, and then forget about it... (p. 56)

Many also complained about faculty being 'lazy', using multiple choice exams that tested for recall of trivial details (encouraging the use of 'cheat sheets'), or not changing exams and assignments from one year to another. While 75% of faculty in our study reported that they regularly changed exams to discourage cheating, one in four indicated they did not (p. 14). We observed, "It is clear that when students perceive game playing

conditions, such as when an old exam is available to a select few, that students are more likely to engage in game playing behaviour" (Christensen Hughes & McCabe, 2006b, p. 16).

Don and I concluded that large numbers of Canadian students reported engaging "in a variety of questionable behaviours in the completion of their academic work" (Christensen Hughes & McCabe, 2006b, p. 17) and that "consistent with the view of over 40% of faculty and TAs, cheating may be a serious problem in Canadian higher education" (p. 18).

### Current Research on Student Academic Misconduct

Since the release of my work with Don McCabe, concern about student misconduct in Canadian universities has continued to grow, championed in large measure by Sarah Elaine Eaton from the University of Calgary. In *Contract Cheating in Canada: A Comprehensive Overview* (Eaton, 2022), Sarah provides a historical account of the multi-billion-dollar contract cheating industry (third-party providers of academic work), from the early "paper mills" or "walk-in" custom essay-writing services of the 1960s and 1970s, to today's sophisticated online services. She makes the case that the prevalence of contract cheating in Canada is due in part to a compromised policy environment, in which such services are not considered illegal (Adlington & Eaton, 2021).

Students are regularly targeted with messages from these businesses, "via social media or direct email, assuring them that this is acceptable and common practice" (QAA, 2022, p. 8). Often listed under 'tutoring', 'copy-editing' or 'exam help', students who are struggling can be easily tempted. Those who avail themselves of inappropriate 'support' may not only find themselves facing the consequence of having violated institutional policies, but they can also be vulnerable to extortion and blackmail (Friesen, 2023). I have personally received email from academic service suppliers, attempting to report students for cheating, ironically because they hadn't paid their bill.

While the prevalence of contracting cheating is hard to determine, Newton (2018) reviewed over 50,000 students' responses across 65 studies and multiple years, finding that "contract cheating was self-reported by a historic average of 3.52% of students" (p. 1). Studies undertaken from 2014 onwards, however, found a much higher rate of 15.7%, suggesting that contract cheating is significantly on the rise. These most recent results are in stark contrast to my earlier study, which found only 1% of students admitting to having bought academic work from a paper mill or website, just over a decade ago.

As student academic misconduct has become more technologically enabled (either through Contract Cheating and/or ChatGPT) its deterrence has become more important than ever.
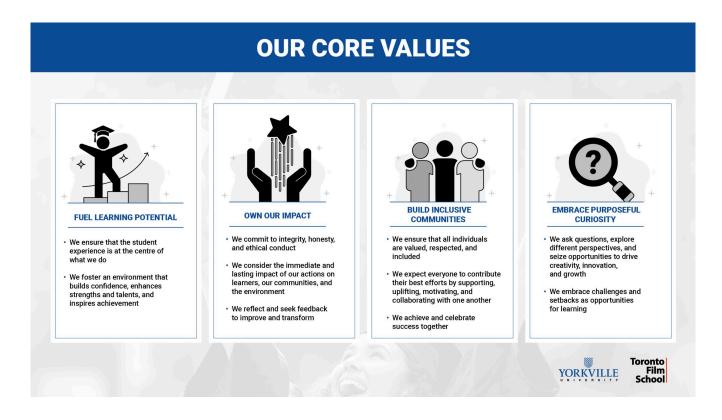
## Some Steps Forward

Today's challenging higher education environment suggests that all institutions need to be reflecting meaningfully on their purpose and their values, including their commitment to integrity – broadly defined. Placing students and their learning at the centre of this commitment, is an essential step. As does the creation and dissemination of new knowledge. Policies and practices need to be assessed for their alignment.

Frameworks (such as those reviewed earlier in this chapter) can serve as useful guides.  Plans (and investments) for ensuring faculty and staff have the skills and capacity to meet stated commitments should follow.

At Yorkville University, over the past year we have clarified our strategic priorities, including areas of distinctive capability, such as the provision of transformative learning experiences, defined in part by a commitment to enhancing self-efficacy, being treated and treating others with respect and dignity, and developing an ethic of care. The student experience is another area of priority, ensuring both domestic (largely online learners) and campus-based international students experience "relentless welcome" (David Scobey, in Felten & Lambert, 2020, p. 14) as a defining attribute.

We have also undertaken an annual survey of all our employees, to assess how they are experiencing our culture, and to identify opportunities for improvement. Last year's (2022) results suggested we had work to do in clarifying our values. Following a highly participative process, Yorkville's core values were officially released through a number of town halls in the fall of 2023, in which employees assessed our current strengths as well as institutional and personal barriers to living them more fully.  We are now engaged in a process of addressing the identified barriers (Yorkville University, 2023).



## OUR CORE VALUES

**FUEL LEARNING POTENTIAL**

- We ensure that the student experience is at the centre of what we do
- We foster an environment that builds confidence, enhances strengths and talents, and inspires achievement

**OWN OUR IMPACT**

- We commit to integrity, honesty, and ethical conduct
- We consider the immediate and lasting impact of our actions on learners, our communities, and the environment
- We reflect and seek feedback to improve and transform

**BUILD INCLUSIVE COMMUNITIES**

- We ensure that all individuals are valued, respected, and included
- We expect everyone to contribute their best efforts by supporting, uplifting, motivating, and collaborating with one another
- We achieve and celebrate success together

**EMBRACE PURPOSEFUL CURIOSITY**

- We ask questions, explore different perspectives, and seize opportunities to drive creativity, innovation, and growth
- We embrace challenges and setbacks as opportunities for learning

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Each of these values has quickly become core to our identity and priorities. We are currently reviewing and updating policies, ensuring their alignment, such as our Code of Conduct.

Another important undertaking has been a commitment to ensuring that our students are well prepared for their career aspirations, as well as changing societal needs and workplace expectations.  Yorkville's signature learning outcomes (SLO's), updated in 2023, reflect our commitment to teaching students practical, transferable skills and values.

| **YU Graduates are:** | | |
|---|---|---|
| | **SELF-AWARE** | They employ reflection, empathy and self-regulation to deepen their understanding of themselves and their communities, and act with integrity. |
| | **DIGITALLY CAPABLE** | They source, evaluate, create, and communicate ideas ethically using a variety of digital tools and platforms. |
| | **ADAPTABLE** | They are ready for complex and changing environments, anticipating and adapting to emerging needs and circumstances. |
| | **SOCIALLY RESPONSIBLE** | They identify and confront historical and contemporary impacts of systemic oppression and contribute to just and sustainable spaces and places. |
| | **COLLABORATIVE** | They contribute to and lead effective teams, integrating diverse perspectives and facilitating collaboration to achieve a common goal. |
| | **PERSUASIVE** | They effectively advocate for themselves and their communities. |
| | **CREATIVE** | They integrate analytical and technical skills with curiosity and experimentation to create original work or propose novel solutions. |
| | **PROFESSIONALLY ENGAGED** | They are ethical practitioners who pursue life-long learning by honing their craft, seeking feedback, exploring diverse interests, and engaging with their professional and academic communities. |

We are now in the process of developing a signature pedagogical commitment, that will capitalize on our uniquely small classes (approximately 20-35 students) as well as the effective design of highly accessible and interactive online and physical spaces.  Significant revision of our approach to student assessment will follow.  These commitments will be supported by the development of a required, training and development program for faculty, in which the *Ethical Principles in University Teaching* (1996) will figure prominently.

We have also recently revised our academic integrity policies, to account for Generative AI, including ChatGPT. In keeping with our SLO's, our guiding philosophy is that students need to be taught how to effectively and ethically apply Generative AI to their academic work, as well as their lives in general.

While we still have much work to do, the steps we have taken are already having an impact.

## Conclusion

We are living through incredibly turbulent times in higher education, where the ideals of integrity are being increasingly challenged.  These times call for clear, ethical leadership, in multiple domains.  Of particular importance to the theme of this chapter, is the essentiality of a renewed commitment to integrity, on the part of faculty and administrators, to students and their learning.  This means the reconsideration of learning outcomes, ensuring the inclusion of transferable skills, appropriate and engaging pedagogies, formative assessments, support for accessibility (including online learning) and a context that is both challenging and supportive, free of hate speech and any kind of physical threat.

As Don McCabe and the other founders of the ICAI observed, "scholarly institutions rarely identify and describe their commitment to the principles of integrity in positive and practical terms (ICAI, 2021, p. 4 ). The time to do so is now.

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## How to Cite

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Julia Christensen Hughes is President and Vice-Chancellor of Yorkville University. Recognized globally for her leadership, Julia has been committed to helping transform the academy since her first faculty position at the University of Guelph in 1987. A former president of STLHE and founding dean of the Lang School of Business and Economics, Julia's advocacy has focused on the need to challenge systemic barriers to transformational learning, research with impact, community engagement and academic integrity.

Steve Joordens and Irameet Kaur

## Re-Imagining Education for an Uncertain Future: Can Technology Help Us Become More Human?

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## Introduction

Our current education system was built for a different time, and a different world. It was a world in which knowledge was important, and only a few were able to obtain deep knowledge related to some specific field of interest (Reigeluth & Garfinkle, 1994). Educators were among these people, and the primary task of educators was to procure, organize, and present this knowledge to students – giving them something that was very hard to acquire in any other way. If you were among those who understood engineering best, or law, or accounting, or aspired to become a doctor, you were positioned for success in life.

In the modern world knowledge remains relevant but is much more easily accessible than it once was. Thanks to online resources ranging from explainer videos on YouTube, to Wikipedia, to so-called Massive Open Online Courses, one can now learn from their choice of educator. That is, technology-assisted online learning has risen up as an alternative to the traditional lecture hall, and while one could argue that the quality of the learning might not be at the same level, the reality is that the quality of online learning varies widely, and some of the best online learning resources allow a quality of learning that is far superior to traditional approaches (Sun & Chen, 2016).

It is perhaps not surprising then, that as the ability to access high quality knowledge becomes progressively easy, success in life is determined more by the extent to which students can combine the knowledge they are learning with critical skills. These skills go by many names including the Six (or Seven) Cs (e.g., Nata & Tungsirivat, 2017), 21st Century Skills (e.g., Chalkiadaki, 2018), Soft Skills (e.g., Heckman & Kautz, 2012), Transversal Skills (e.g., Goggin et al., 2019), Transferable Skills (Assiter, 2017) or the term we will use here: The Skills of Success (Mitchell et al., 2010). While the specific skills associated with a given term vary slightly, all include critical and creative thought (aka, problem solving), socio-emotional communication and collaboration skills, and perhaps most important, the skill set involved in being able to negotiate the negative emotions that

come with seeing the weaknesses in one's current work, and being able to navigate those emotions to ultimately allow for personal growth (Lumpkin, 2020).

Over the last two to three decades, virtually every entity or organization that has considered the reforms to education that are needed to better align it with the Future of Work ultimately focuses on the challenge of how to include a serious and structured approach to skill development (Fullan, 2014; Joordens, 2018; Tam & Trzmiel, 2018). More specifically, how do we develop within our students the skills they need to be critical and creative, to be good listeners to others while also being able to represent themselves well, to be the kind of people who collaborate well with others to reach some common goal? Perhaps most importantly, can they also learn the core skills of personal growth, seeking out ways to improve despite the negative emotions this might cause, and then doing what needs to be done to improve the weakness? This is indeed a significant challenge. Teachers, and school administrators already feel overworked and undervalued (Naylor, 2001) and, as will be discussed below, developing skills takes significant time and effort. If we are to add a serious focus on skill development into our educational systems to better align it with the modern world, something we are currently spending time and effort on must go. That is, it is now critical that we free up the time to focus on skill development while not losing out on something valuable, for example the knowledge transmission that does remain relevant.

Why is it so critical to reform our educational systems in ways that focus more on the development of the core skills of success? In fact, these skills have always been important as evidenced by the fact that they tend to be the core skills that employers seek when hiring, yet also ones, they argue, that are generally not being developed well by our educational systems (Andrews & Higson, 2008). That said, the relevance of these skills has become even greater as more hands-on jobs are giving way to automation (Pouliakas, 2018) and as entrepreneurship opportunities have resulted in the creation of jobs that did not previously exist (Green & Henseke, 2016). Add to this the fact that only 27% of college graduates end up in a job directly related to their major (Able & Deitz, 2013), and the fact that those who are hired but are then found to lack these skills are often the first to be let go (Klaus, 2010). If we care about the future success of our students, we need to do a better job developing their skills of success.

## Adding the Acceleration of AI to the Story

ChatGPT was released on November 30, 2022 (ZD Net, 2023) and has now become the focus of daily conversation, if not several daily conversations. The more we all come to understand the step forward in AI that it represents, the more we understand that AI will indeed change our world in ways we can't totally predict and it will do so quickly. Almost nothing in our world will be immune to the impact of AI. According to a 2023 McKinsey report for example, roughly 15% of current jobs will be replaced by AI by the year 2030, with up to 30% eventually being replaced (Chui, 2023). Other pundits have estimated the lost jobs number as closer to 40% of jobs replaced with AI in as little as 5 years. Nobody is certain of course as we are still amazed on an almost daily basis by just how much current variants of AI can do, and those variants are improving quickly and will continue to do so.

The acceleration of AI raises a critical question connected to the first section of this chapter; what jobs will be left for humans to do? Once again, we cannot be 100% sure, but our best bet is that it will be the kinds of jobs that leverage our humanity, the kind of jobs that lean very heavily on exactly the skills highlighted

above; critical and creative thought, clear effective communication and collaboration, and the skills of personal growth. Thus, the acceleration of AI has not changed the general vision of where our approach to education must go, but it has made the need greater than ever, and the timeframe within which to meet this need is shorter than we would have ever imagined.

As authors asked to speculate about the future of education, and the role educational technologies will play, it is tempting to try to predict all the ways AI will impact what we do and how we do it. We will do a little of that in this chapter, but our primary focus will be a little different. Specifically, the question guiding our thinking is this:

> *If our approach to education is to change in a way that will better prepare our students for an uncertain future, what would that education system look like, and what role might technologies – including AI – play within it?*

With this question in mind, the current report will highlight the critical role that online learning can play in terms of "freeing up" the time necessary to allow teachers to focus on skill development. We will argue that online learning resources, bolstered by Ed Tech, can be used to lay a common foundation for deeper learning, and can do so in ways that enhance engagement and deepen learning while also allowing for a better personalization of learning. If done right, online learning can be used to help all students come to class with a relatively similar knowledge foundation. With that foundation in place, face-to-face learning can then be used to deepen the knowledge while also giving students structured exercise with the core skills of success, the skills we suspect AI will not possess. Optimally students would be applying the skills and knowledge they are acquiring to real-world "authentic" problems, and whenever possible would perform projects that integrate with their community. Ultimately, the vision presented will be one in which the mode of learning moves progressively from a rich form of the digitally-managed learning of foundational knowledge and skills, to the application of those skills and knowledge within progressively more realistic contexts.

To this end, the remainder of this chapter is organized into the following sections: We begin by discussing the psychology of knowledge transmission versus that of skill development, highlighting how the two occur in very different ways, requiring very different learning environments. We then discuss the merits of online technology-enhanced learning when done well, highlighting how it can bring together multiple avenues of learning with assessment to create a context in which each student is optimally supported as they learn the foundational knowledge of some area, and even foundational skills. Finally, we reimagine face-to-face learning, highlighting the attributes it should have to give our students the sort of practice environment needed to deepen the knowledge and to develop the skills of success to the level needed to truly bring our students the success we all want them to achieve.

## The Acquisition of Knowledge is Fundamentally Different from the Acquisition of Skills

We know things, and we know how to do things. In psychological terms, the knowledge we have of the world is called semantic knowledge, whereas the skills we possess – the knowledge of how to do things – is called procedural knowledge (Tulving, 1987). These two forms of knowledge are supported by different memory

systems (semantic and procedural memory respectively) and, critically, these two systems acquire information in fundamentally different ways.  Semantic knowledge can be acquired through simple and somewhat passive interaction with new information.  Attend a great TED talk, wherein an engaging orator provides a well informed and organized presentation, and you will leave with new semantic knowledge that you acquired in 18 minutes while simply sitting and listening.  Procedural knowledge is not acquired passively nor quickly.  Rather, the acquisition of procedural knowledge requires the learner to engage in the skill being learned, initially at a relatively non-fluent level.  With repeated practice, especially within a context that provides structure, support and feedback, the skill will become more and more fluent. With sufficient practice it can become almost "second nature" (Shiffrin & Schneider, 1984).

If we bring this into the educational context one can make the argument that the traditional focus of educational institutions has been to enhance the semantic memory of our students, their core knowledge of the world. At this point though, to be fair to traditional learning practices, we need to differentiate between two sorts of skills. One sort we will refer to as the knowledge-entwined skills. When a student is learning science, in addition to learning the facts of science, they also learn to use the tools of science from microscopes to Bunsen burners, and this includes knowledge of how to do things; procedural knowledge. Yet it is very specific procedural knowledge, procedural knowledge that is tightly entwined with the semantic knowledge, that is the focus. Another example of this sort of knowledge-entwined skills would be learning the order of operations, or how to solve various mathematical problems.

While knowledge-entwined skills are clearly important to those specializing in the specific branch of knowledge, the skills we will highlight here are the more general skills of success.  These are assumed to be generalized skills, also sometimes called transferable skills (Assiter, 2017), that can bring one success across a wide range of contexts, and not just work contexts, life contexts as well.  Yes, we can highlight how good critical and creative thinking skills will allow one to be valued as a problem solver within their workplace.  At the same time, critical thinking helps you find the right life partner (well, it plays some role at least), and creative thinking helps you keep that partner interested.  Of course, communication and collaboration skills are always important in ways we will highlight shortly, and nearly everything of value these days happens within teams (Grover, 2005).  Perhaps the ultimate transferable skill is the skill of being able to learn and grow as a person in light of data highlighting personal weaknesses (Dweck, 2015) as that skill allows one to grow into almost any situation.

As we and many others have argued, these skills are viewed as critical for our current students if they are to succeed in the modern and future labour markets (Belchior-Rocha et al., 2022), and this was true even before ChatGPT made it even more urgent.  Unfortunately, it goes even deeper than that; one can argue that currently our youth are far more behind in their development of some of these skills than was the case for many of the older among us. Notice that some of the skills of success, especially those associated with communication and collaboration, require people to work together in real time. They require an open and comfortable interaction among humans as they try to solve some problem or come up with a creative idea.  Thanks in large part to social media, our youth have lived largely in a world of safe, asynchronous, "detached from real nonverbal communication" social interactions to the point where there is now an epidemic of social anxiety (Dobrean & Păsărelu, 2016). They simply have not had the same degree of practice engaging in real-time, face-to-face interactions as we did prior to the ubiquitous use of social media. When they are thrust into such situations,

they feel threatened, and their first impulse is to flee (Teachman & Allan, 2007). That is our instinctual response to threat (Winton et al., 1995).

While the highlighting of social anxiety may seem like an aside, it is anything but. If the goal of our teaching is to prepare students to tackle the difficult challenges all around us, that is something they will only do in concert with others. We need an education system that accepts where people are, and where they need to be to succeed. If the skill of effective human interaction is of great value to future success, and if this skill is one that current students lack, all the more reason to make it a priority. Some refer to this specific skill as socio-emotional communication, the ability to communicate with others in ways that strengthen, rather than weaken, our connection to them (Tarasova, 2016).

There is, in fact, very little disagreement within educational advocates around the importance of developing these skills (Boncu et al., 2017). That, of course, suggests that we will alter the way we educate in a manner that will bring a more structured approach to skill development into our curricula. That, in turn, leads to two questions. First, how can we do this? Second, if the solution to the first question requires additional time or resources devoted to skill development, what will we remove from our current approach without sacrificing learning? These are very hard questions, especially given what we know about skill development – that it requires repeated, structured, and active practice with timely feedback (Joordens et al., 2019). It is perhaps not surprising that answers to this challenge have been slow coming. With all humility, we offer one in the sections that follow.

## When Done Well, Technology-Enabled Learning Provides a Superior Approach For Transmitting Foundational Knowledge and Skills

The pandemic was not kind to the public's perception of the merits of online learning (Adnan & Anwar, 2020). When it became suddenly dangerous for children to be in close proximity to one another, educators scrambled to online learning as a form of emergency learning. Prior to this time, those using online approaches tended to be learning experts who knew how to leverage the advantages that online platforms can offer, including how to harness various forms of Ed Tech to enrich and deepen the learning experience. However, during the pandemic, a very basic form of online learning was offered by teachers with little previous experience with, or knowledge of, online learning. In addition, responsibility to manage the learning on the student side was left to parents who themselves had little knowledge of how to do so, and who were often assisting their children as they also attempted to work from home or deal with other pandemic related issues. Simply having the children at home was already stressful, being expected to play part of a teacher role that was completely new to the parent made it even more so (Brown et al., 2020). It should be no surprise, then, that the result of all this was a generally negative view about the educational potential of online learning, and a general embrace of traditional face-to-face learning.

Online learning will play a critical role in the educational system we ultimately describe and, given this, it is important to dispel the notion that online learning is simply a poor substitute for traditional face-to-face learning, at least in terms of knowledge transmission. In fact, there are now a number of meta-analyses that have assessed the impact of online learning (Castro & Tumibay, 2021), and one that has directly considered the relative merits of online versus face-to-face approaches to education (Stevens et al., 2021). Stevens' et al.'s

meta-analysis included 91 comparative research studies within the 2000-2020 period, each of which assessed the extent to which an online versus a face-to-face offering of a course better achieved the desired learning outcomes. The results showed that in 41% of the comparisons, online approaches were found to be superior, in another 41% the method of delivery did not matter, and in 18% the face-to-face approach was found to be superior. This research highlights a number of advantages associated with online learning when it is created with intention, and wielded by educators who understand how to best implement it.

Sometimes the challenges inherent in certain contexts help bring out the skills we need to meet those challenges. One of the challenges of online learning is the fact that often management of the learning experience is left more in the hands of the learners themselves, suggesting that the ability to "self direct" one's learning may be important to success (Hartley & Bendixen, 2001; Shapley, 2000). Interestingly though, not only does online learning reward those better at self-direction, but one study suggests that experience within online learning contexts may actually help to enhance one's ability to self-direct (Vonderwell & Turner, 2005). This could be especially important for younger learners and it may enhance their resilience to succeed in contexts where less external support is available (Robinson, 2003).

Rather than pitting one against the other, many who consider the relative merits of online versus face-to-face learning ultimately view them as complementary approaches that could provide especially powerful learning if used together in principled ways (Warner, 2016; Watson, 2008). In fact, the educational system we will propose will follow this same principle, combining online and face-to-face learning in ways that optimally leverages the advantages that each bring to the table. First though, we will focus on online learning, and the critical role it may play in freeing up teacher time and energy, thereby allowing time for the development of the skills of success.

The remainder of this section will highlight some of the key aspects that can allow well-designed online learning to have an impact that can surpass the impact of face-to-face learning approaches. These aspects will be considered within two contexts. First, we will focus on the process of acquiring information, which traditionally happens when teachers present material within their classes. Second, we will focus on the assignments given to students to have them work with the knowledge they have been learning. To be clear, our argument will be that our optimal future education system will rely heavily on online learning to provide a common knowledge-base upon which skills can be developed via synchronous face-to-face interactions.

## Acquiring Foundational Knowledge.

Imagine you are a student and, for the first time ever, you are about to learn about the periodic table of elements. How did they come to be known? What figures are associated with the table? How does it advance our understanding of the material things we interact with in the world? How does it allow us to think about our world differently? If a traditional approach to learning is being used, your ultimate understanding of this foundational knowledge will depend heavily on the proficiency of the teacher to present it, and on the extent to which supplementary materials like textbooks can augment that understanding.

Now let us consider this from a digital learning perspective. Before focusing on the way online learning can enhance the learning experience itself, it is worth noting some of the reasons why so many seem to

prefer to learn online. These advantages often link to a critical factor that makes some experience intrinsically motivating, a factor termed autonomy (Deci & Ryan, 2012). Specifically, humans enjoy experiences when they feel they have control over the experience rather than being subjected to it and they appreciate convenience. Online learning, as discussed, is believed to give more control over the instruction to the learners (Garrison, 2003). Of course, this also suggests a need to effectively self-regulate as highlighted previously. Thus, often it makes sense to provide some level of structure and scaffolding to help students succeed (Kaur & Joordens, 2021) which in term may enhance their ability to self-regulate going forward (Vonderwell and Turner, 2005).

Focusing more specifically on the learning experience itself, in the hands of talented online-learning designers, that same content can be presented in a manner that creates a much more engaging and personalized experience for the learner, one that puts the student at the center of their learning (Overby, 2011). Consider the following possibilities. The information can be presented in a way that seamlessly combines various forms of multimedia ranging from an expert talking, to animations, to conversations, to charts and data, etc. (Swerdloff, 2016). This is the way students are used to interacting with information. Some of the bits included could involve "bringing the student into the real world" through video clips that show the relevance of what is being taught (Stuckey et al., 2013). Imagine if part way through a presentation on the periodic table someone from Apple describes how they use specific elements in combination to create the screens of the phone that students have in their pocket. It can also allow the information to be presented in a number of different ways, via slightly different modes (visual, auditory) that combine to reinforce the critical points (Clark & Paivio, 1991).

Also critical, while the traditional approach often involves teachers discussing many topics throughout the day, each guided by a curriculum and past experience, online learning resources are more often designed and produced by educational developers who have a deep knowledge of how to engage minds (Sharpe, 2004). They are developed with the intention of being reused, and as such the production is of a higher level, and the care and planning of the learning is often more detailed and evidence-based. For example, we know that beginning a lecture with something that stimulates curiosity can make a student more interested in the learning (Markey & Loewenstein, 2014), we know that humor when used well helps to create a safe learning environment (Pretorius et al., 2020), and we know that presenting things in structured ways with strong scaffolding is critical (Greening, 1998). These and other factors enhance engagement and engagement is the front door to learning (Joordens et al., 2019). Many teachers simply do not know the science of learning to this level and hence are not in the same position to harness it optimally (see Moallem, 1998).

Online learning also has the potential to personalize the learning experience in ways that would be difficult in a traditional classroom (Svenningsen et al., 2018). For example, in the traditional approach all students are exposed to the exact same presentation of knowledge, including the examples used which may resonate with some students but not others.When creating an online learning resource, it is relatively easy to create several versions of video on a given topic, where the different versions may use examples and such that connect the information to specific interests a student may have (music, sport, video games, fashion, etc). The student could then be allowed to choose the video that will most closely connect with their interests (Albrecht & Karabenick, 2018), and giving students choice is itself a facet that also enhances the students sense of autonomy in the learning process (Schutte & Malouff, 2019).

This personalization of learning can also include what some have termed adaptive learning opportunities (Kerr, 2016). That is, it is now readily possible to embed quick assessments directly within the online learning

experience (Singleton & Charlton, 2020). This serves several purposes. First, experiencing the assessment gives the students the opportunity to engage in so-called retrieval practice (Roediger & Butler, 2011) an often-overlooked practice that leads to much stronger learning. These embedded assessments also give the students a good signal with respect to whether they have followed the presentation so far, allowing them to review the material again when they do not (Bassili & Joordens, 2008). In addition, it can allow the system managing the learning to know where the student is in terms of their understanding, which can then be used to push students towards supplementary learning materials when needed. For example, let's imagine our presentation on the periodic table involves the building up of knowledge. We start with some initial bit of content, and then build on it. But we should only build if the student is able to grasp that initial information.The assessment can let us know, and if a student is not grasping the information, then before additional building occurs we can direct the student towards a different and perhaps richer explanation of that initial information.  We assess again, and if the student has now acquired that knowledge we bring them back to the building process.

This last point is critical because students will come into the learning experience with varied preparedness for what they are about to learn. By connecting with issues they find relevant, we will enhance engagement and learning. By using assessment wisely, we can be sensitive to where they are in their learning journey and can, to some extent, tailor the learning experience individually for each student "on the fly". Some students will need more scaffolding than others, and this allows us to provide the scaffolding to those in need without annoying those who are ready to go on. By giving students choice on context within which the learning will be presented (i.e.,the examples used, or real world things connected to) we are enhancing student autonomy, which has been shown to be key to them becoming intrinsically motivated learners (Boud, 2012).

This ability of online-learning to tailor the experience to the student is especially important post-pandemic given the so-called learner-gap issue (Bonal & González, 2020). Some students continued to learn deeply during the pandemic, others were not able to do so for a wide range of reasons. It is impossible for a teacher who is speaking to 30 students to tailor the presentation of material to this extent, to use different examples with different students, to show a deep sensitivity at all times to whether they are understanding or not, and to give students a choice with respect to the contexts they use to present some information.

When the challenge is how to get the most students to a good understanding of some foundational knowledge, especially when they come into the experience with such varied preparedness, online learning has important advantages over face-to-face learning. The ability to tailor the experience, to connect it with what interests the student, to know where students are in their learning journey, and to allow students more autonomy over their learning, these are all important aspects that are nearly impossible to achieve without using online learning.

There is also a strong potential role for AI in terms of personalizing the learning experience.  In the March 23, 2023 issue of Fortune magazine, Bill Gates predicts that all of us will soon have a personal AI assistant that organizes our tasks and assists us to get through them efficiently (Pringle, 2023).  This concept fits well with Vygotsky's notion of student learning (Shabani et al., 2010). In Vygotsky's notion, a teacher is carefully assessing where a student's proficiency current is, and then they craft learning to enhance that proficiency without asking too much of the student and demotivating them. That is, the teacher is targeting what Vygotsky called the Zone of Proximal Development, the area beyond one's current abilities but within reach with the

right assistance. Thanks to AI, every student might have their own learning coach skilled at structuring learning experiences that allow the student to succeed and grow.

There is another interesting possibility relating to AI and the assessment of knowledge acquisition. Currently we use very poor devices to assess learning, like the ubiquitous multiple-choice test. Each multiple-choice question includes a number of "wrong answers" that we essentially associate with the question as the students do the assessment. Students learn during tests, and they can learn these wrong answers (Rowland, 2014). Perhaps the optimal way to assess knowledge acquisition is through an oral examination, an approach that used to be considered logistically impossible at large scale but thanks to educational technologies is a technique becoming available again (Akimov & Malin, 2020). With the dramatic developments in AI occurring now, one can imagine an AI-based interrogator that could interact with students one on one, ultimately arriving at a quantification of how well they have retained knowledge.

Note, this section has focused primarily on knowledge acquisition, but that should be assumed to also include the knowledge-entwined skills alluded to previously. For example, learning the rules governing how elements interact and reform within chemical contexts is part of understanding elements and appreciating the periodic table. This is where animations can play a critical role, allowing students to see things that could not be seen otherwise, and giving the learning-designer complete control of how these rules are depicted. Similarly, if students are learning how to properly employ the order of operations, immediate embedded assessments can tell us not only if they grasp the rule correctly, but depending on the errors we see it can also provide information about where the student is going wrong. This information can then be used to drive the appropriate follow-up learning. This consideration of knowledge-entwined skills also provides a bridge for us to move our consideration to the assignments students are asked to do as part of their learning experience.

The primary point of this section is simply this; when the right learning expertise is combined with the right technologies, technology-enabled approaches can likely do a far superior job with respect to teaching core knowledge in engaging and interactive ways that can be personalized for the learner. Yes, this was the role of educators in the past, and educators would certainly need to continue to play the role of subject matter experts in the creation of the learning resources. Critically though, they would no longer need to invest the same amount of time presenting this material to students year after year, though they may need to invest some time now and then updating content.

## Working with Knowledge While Doing Assignments.

In the introduction we drew a distinction between knowledge, knowledge-entwined skills, and the more general skills of success. The previous section highlighted how technology-enabled digital learning can help all students achieve a relatively common foundational level of core knowledge, and how it can also support the development of knowledge-entwined skills. We now return to a consideration of the more general skills of success. At this point, it is critical to introduce a very simple formula ...

$$\text{Skills} = \text{Knowledge} + \text{Practice} \quad (1)$$

With respect to knowledge-entwined skills for example, one can be taught the rules governing, say, the

order of operations when solving a mathematical problem. At that point the rules are knowledge. As the student now applies that knowledge by repeatedly solving a range of mathematical problems, that knowledge gradually becomes embodied as a skill (Shiffrin & Schneider, 1984). With enough practice, doing things according to the order of operations will become natural, and the student may not bring the actual rules to mind at all. Doing things according to the order of operations has become a skill.

When we ask our students to do assignments that require them to use the knowledge they have learned in active ways a number of pedagogically good things happen. First, with respect to the core knowledge itself, as they apply it they see its significance and how various pieces of knowledge relate. As a result, they now hold that knowledge at a deeper level (VanderArk & Schneider, 2012). It is no longer something they have learned, it is something they have used to solve a problem. Second, these assignments provide a context for students to exercise knowledge-entwined skills by applying them within some specific problem context. This is exactly the sort of practice that helps develop these skills, especially if the context provides structure, support and timely feedback (Pogonowski, 1987).

Once again, we can consider traditional forms of such assignments and contrast them with online forms. Traditionally assignments bring to mind things like book reports, scientific reports, posters, case studies, etc. Students are given some specific task related to some specific thing they are learning, and it's typically left to each student to create their own composition following some guidelines. Students know that the composition they are creating is simply a means for the teacher to assess their current understanding and proficiency and that it will have no value to anyone once graded.

Online assignments can add elements that can help make the experience of the assignment more engaging and therefore more powerful as a context for learning. For example, multi-media compositions can be more readily accommodated (Pathak, 2001), students can be connected to one another to work in teams (Mayadas & Hultin, 2010) or in simulations where each plays a specific role (Beckem & Watkins, 2012). Given the ability to manage complex logistics on the fly, students can be guided through active learning experiences, and those experiences can again be shaped by the students' performance throughout (Andersen et al., 2016). It also becomes possible to connect students with community partners facing real problems, supporting a more authentic form of assessment that students find much more engaging (Baasanjav, 2013). As alluded to in the section above, support could be provided to students in the form of Chatbots which can manage communication and help students find their way to the right answers (Clarizia et al., 2018; Colace et al., 2018). Quite simply, in the hands of a great instructional designer, a much more interesting, engaging and personalized learning experience can be created, ultimately resulting in a deeper understanding of core knowledge, and an enhanced proficiency using knowledge-entwined skills.

Critical to the educational system we will ultimately propose, assignments can also be a context within which students can begin to acquire a foundational level of proficiency with the skills of success we will emphasize later in this chapter (Joordens et. al, 2019). To be clear about this, let's focus on the potential of online peer assessment. There now exist technologies that guide students through a process that works as follows. First students submit a composition in accord with teacher instructions. Next, students see and assess the work of a subset of their peers (say 4) ultimately perhaps rating that work according to some rubric, and then giving each peer some positive feedback and, critically, some constructive feedback. Finally, students see the feedback peers have applied to their own work, and they are given the opportunity to use that feedback to inform a revision

of their work for final submission to the teacher. It turns out that it is very challenging to give constructive feedback in a way that will not cause frustration in the receiver, and when one is on the receiving end of feedback it can be hard to get past the negative emotions we naturally feel when seeing a critical analysis of our work. When done well, students are supported as they go through these challenges as they are ultimately learning how to communicate in socio-emotionally proficient ways with other human beings, a core skill of success.

Note that these approaches also give students the opportunity to practice all the skills of success. Consider the challenge of having to give a peer useful constructive feedback, feedback that does not simply expose a weakness in the work, but that also provides suggestions on how to improve. For a student to do this they must first read the work carefully (i.e., receptive communication) while looking out for weaknesses (i.e., critical thought). When a weakness is found they must consider ways in which that part of the work could be improved (i.e., creative thought). Ultimately, they must then communicate this to the peer in a socio-emotionally appropriate way (i.e., effective expressive communication). Doing this for a number of peers adds the repetition that allows these skills to develop. In addition, seeing the work of peers helps students better understand where their work fits and how it could be improved (i.e., metacognitive awareness).

This is exactly the sort of logistically complex assignment that the digital technologies associated with online learning can manage smoothly. One such technology, peerScholar, does not only manage the process of assigning and re-assembling reviews and work in general, it also provides structure and the timely support that helps students succeed, even those with lower initial levels of preparedness (Joordens et al., 2019). For example, before students are asked to give feedback to peers, they see three short micro-learning videos (see videos.peerScholar.com for examples) that inform students of the challenges of giving feedback, and then provide clear suggestions on specifically how to provide feedback in socio-emotionally appropriate ways. Students watch these videos to gain the knowledge, and they then immediately practice that knowledge as they give feedback to peers (Skills = Knowledge + Practice). Other videos assist students in analyzing the feedback they received and using it to guide a revision, others support them as they work within teams.

Assessments are also embedded in the process highlighted above to make the learning even stronger. For example, a student initially gives feedback to four peers, when those peers receive the feedback they assess its quality based on the features they have learned about. The initial student can then see the assessments provided by those they gave feedback to, and they can use that information to improve the feedback they give going forward. As this example shows, assignments within an online learning context can be very rich pedagogically, incorporating many different devices to support the learner, and to give them an experience they are most likely to learn from, and this even extends to the development of core skills of success.

There is one important thing to note at this point. While activities like this can set a skills foundation, the ultimate goal with respect to the development of the core skills of success cannot be achieved through online learning alone. We want students to naturally use these skills in real world, face-to-face, synchronous contexts as they interact with other humans. For example, imagine the student who has just landed a job interview for a position they want very badly. If we succeeded in developing the core skills of success in that student, they will excel in an interview context. They will listen carefully to questions, they will be able to think critically and creatively on the fly, and they will express themselves and their ideas clearly and efficiently. Online peer assessment is asynchronous and anonymous. It provides a fantastic opportunity for laying the foundation for

the further development of the skills of success, but ultimately that foundation needs to be built upon, which is where face-to-face learning will come in.

As described above, well-designed online learning experiences can and should be playing a key role in helping to bring students of varied preparedness to a place where they are ready to take their learning deeper, and where they can learn to use the skills of success in real-world ways. The factors described can make learning more engaging and more personal, and the ability to assess on the fly allows us a further degree of adaptability of the learning experience. At the outset of this section we described a meta-analysis suggesting that 41% of the research studies comparing online to face-to-face learning suggested that online was superior, versus 18% suggesting face-to-face was superior. It would not be surprising if, for the latter, a better-designed online learning experience might have reduced that number even further.

In the introduction to this work we suggested that if we are to imagine an educational system of the future that includes an impactful approach to developing the skills of success in our students, then something we are currently doing will have to change to free up the time and energy of educators. Our argument here is that, of all the things teachers do, the laying down of core foundational knowledge and skills is something that can be done better through an embrace of technology-enabled digital learning. The necessary resources and applications may take some time to build but companies exist that are already creating this content, many educational institutions also have groups equipped to help with this as well, and once we have content and an experience we feel is very strong, it can be reused. So yes, there would be an initial phase of getting things in place, but thereafter teachers would not have to spend time and energy teaching the basics to their students. Rather than doing homework in the traditional sense, the students could be expected to spend some time (home or at school) engaging with the digital learning environment.

## Going Human and Going Deep

Earlier in this report we highlighted the epidemic of social anxiety that is now so common (Medina, 2021). Consider the face-to-face interview context described above. This is a situation most students would approach with deep anxiety and very low expectations of success (Budnick et al., 2019). This deep anxiety can be explained in terms of a simple lack of practice interacting with other humans in real time and in the real world (Jackson & Everts, 2010). Those who have grown up in the "comfort" of social media often socialize in asynchronous ways that do not provide them with access to nonverbal cues (Remland & Mahoney, 2020). In fact, in general, online learning can be an isolating experience, one that does not provide students rich opportunities to build critical social skills (Suryani et al., 2021). This negative aspect of online learning is one reason why a purely online approach to learning is ill advised as these human interaction skills are critical to student success in life (Beers, 2011).

The missed practice with nonverbal communication is so important. Mehrabien (e.g., 2017) estimated that over 90% of the communication in a face-to-face conversation is nonverbal. Specifically, he gave the so-called 55/38/7 rule; 55% of the conversation is nonverbal communication from the body and face, 38% is nonverbal from voice inflections, and 7% is verbal. These nonverbal cues are typically processed implicitly, and they provide the emotional context for the words. We automatically pick up on things like does our conversation partner like us? Do they think we're funny, or smart, or attractive, or interesting? Are they in a rush, are
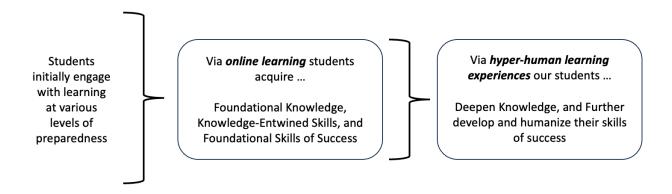
they bored, are they lying to us when they talk?  Accurate reading of these cues allow us to engage with them respectfully and intelligently, and we use them as feedback that supports the learning of how to have mutually comfortable and respectful conversations.

Sensing someone is bored, or that they don't really like us is uncomfortable. Having to listen to them carefully and then reply immediately with something that they will consider interesting or relevant is challenging. It's easier and more comfortable to deal with only the words, and to have time to think before responding. This is the comfort that social media provides, that so many youth are trading for practice in real-time face-to-face conversations, or even real time phone conversations. They are denying themselves practice in reading and understanding all that nonverbals cues convey. When they then find themselves in situations where they must think and react "on the fly", where their reactions should be informed by the non-verbal cues others are sharing, and where they know their own real emotions are revealed by their non-verbal cues, they feel unprepared, incompetent, they assume things will go poorly (i.e., they suffer from a fear of negative evaluation) and, if given the chance, they will avoid these interactions at all costs (Remland & Mahoney, 2020). Again, denying themselves what is most needed, practice.

These and other factors have lead us all to live increasingly more isolated lives which is a problem because the best predictor of happiness is our number of close social contacts (Cacioppo et al., 2008).  Thus, it is not just the case that the modern world puts a premium on one's ability to use the skills of success, it is also the case that many of our current students are deficient in what may be the most important of these skills, the ability to communicate richly with other humans. If we don't counter this trend in some way, this deficiency will only grow deeper.

If society is to tackle this issue of better supporting the development of the skills of success, the most obvious place for that to happen is within our schools, colleges and universities. For this to happen in any impactful way, time needs to be specifically devoted to exercising these skills, appropriate learning experiences must be devised and used in an intentional way to develop these skills, and means must be found to quantify these skills (Joordens et al., 2019). Students must also be prepared for the experience, each feeling competent in their knowledge and each having a basic skills foundation to work from.

At last then we can depict the educational system we see as most convergent with helping our students succeed in the uncertain future world. As depicted in Figure 1, it involves using well-designed and well-produced online learning to bring a group of students with varied initial preparedness to the point where each has a similar and strong grasp of foundational knowledge, knowledge-entwined skills, and a foundation in the skills of success. With these factors in place, we then move to hyper-human learning contexts. That is, contexts specifically designed to bring students together, with each other and with educators, to work on authentic issues in collaborative ways. Throughout this process skill development is structured and supported through the principle of informed practice. At the same time, knowledge continues to build, but it does so in a less constrained manner, and in a way that is purposeful. That is, as students engage in the various activities, they will need to acquire knowledge that is then combined with their existing knowledge and other new knowledge to reach some relevant goal that optimally will have value beyond the learning experience itself.

**Figure 1**

| Students initially engage with learning at various levels of preparedness | Via **online learning** students acquire … <br><br> Foundational Knowledge, Knowledge-Entwined Skills, and Foundational Skills of Success | Via **hyper-human learning experiences** our students … <br><br> Deepen Knowledge, and Further develop and humanize their skills of success |
|---|---|---|

*Note.* Depiction of the core characteristics of an educational system aligned with success in the modern (and future) world.

For example, one skill we would like students to develop is what is formally termed "receptive communication." It refers to good listening skills which are more rare than most of us realize.  Informed practice in this context might look like this.  Students would first be taught the concept of active listening, a process that involves showing deep interest in another's thoughts, listening without judgment, asking questions only for clarification or to provoke more thoughts, etc (see Robertson, 2005). When one has listened well, they are able to repeat what they heard in a way the speaker appreciates. Students would first be given the knowledge related to the skill, they would then be given the opportunity to engage in informed practice; Skills = Knowledge + Practice.

What would informed practice look like in an example like that described above? That's where the creativity of teachers would come into play. As a community, teachers would be asked to devise and share interesting approaches to exercising core skills in ways that also enhance knowledge within relevant subject areas. Well-designed technology could support the assessment and sharing of practice. If the subject area was engineering, for example, every student could first be asked to deeply learn about some product and the person behind its invention, deep enough to "play that person" in a mock interview. Students could then be paired to simulate a reporter interviewing that person about their creation, each taking turns playing the role of reporter versus inventor. The reporter's main task would be to practice the critical life skill of active listening in this interaction (Rost & Wilson, 2013), which works well because reporters model something akin to active listening regularly. In the interaction that follows, which would be unscripted, the reporter would try to learn more and more about the inventor, and the problem they were focused on in an attempt to "guess" the product. Both would gain experience within a human face-to-face interactions, and that interaction would occur in a context that is spontaneous and synchronous, while also being "safe" in the sense that it's controlled role playing and a little fun. Other students might be asked to listen with the goal of identifying the mystery product, entering their guess via some platform and perhaps being rewarded in some manner for listening well themselves. As that example highlights, the focus would be on giving students practice working with others, communicating with others, and essentially addressing their lack of practice in face-to-face real time human interactions in the manner that is focused on developing their core skills of success, while also building upon their knowledge.

Lest that last point be lost in all the emphasis on the skills of success, skills are best developed in authentic

contexts (Lombardi & Oblinger, 2007) and some of the most effective learning contexts, such as problem-based learning (Allen et al., 2011), require students to acquire new knowledge in a purposeful way. To, in some manner, help solve a problem. This is how we seek knowledge after our formal education, so this is a great skill to develop. It does mean the specific knowledge a given student acquires will depend on the activities they performed, which implies that if we wish students to enhance their knowledge in some specific areas we only need design activities that should bring them to that knowledge.

The remainder of this section will focus more on what hyper-human learning could look like, but before going there we wish to make a few assumptions clear with respect to the approach depicted above. The natural inclination might be to think of this in terms similar to those involved in a "flipped classroom" (Akçayır & Akçayır, 2018). There are certainly parallels, although we are focused on the institutional level rather than on the class level. However, in a flipped classroom the usual assumption is that students do their online learning as homework, and come to class for something like the hyper-human learning we have in mind. Note that while this is one approach, another possibility is that the digital learning also happens within the school, but simply does not require the same level of teacher engagement. Teachers could be focused primarily on the hyper-human learning, while educational support workers (or AI) could assist students in accessing and working with the online resources. That said, for students who require more digital learning to keep up with their peers, that could indeed happen outside of the school.

This approach might also bring to mind the notion that the teacher must move from being the "sage on the stage, to the guide on the side" (King, 1993). But this also does not truly fit our vision. We still see the teachers as sage's of a sort, but sages with a focus on how best to develop the skills of success while also building knowledge in active ways. By analogy, consider non-academic contexts where skills are taught. Is the martial arts instructor a "guide on the side"? Perhaps, during the periods where students are practicing the skills. But that instructor initially teaches those skills as knowledge (skills = knowledge + practice). They first describe and demonstrate how to perform the skill well. They also ensure the context of learning has the attributes that will make the practice most effective when students are asked to put their new knowledge into practice. In a real sense, they are sage's of skill development, and their craft is one of informing, and then supporting, skill development in the most evidence-based manner.

What would this hyper-human learning look like? Well first, it should include a wide range of specific learning activities, but they all should have certain characteristics in common. First, as suggested by the name we gave them, everyone one of these activities should involve students working with others. In a real workplace, perhaps only some of the work is collaborative. That's why we refer to this as "hyper-human". To overcome deficiencies and exercise the core skills of success the optimal situation would be to have every learning context be collaborative. Second, these contexts should be ones that provoke the students to engage the skills of success in their work. Thus, the premium should be on activities that ask students to think critically, perhaps while identifying issues in some context. They should be asked to think creatively, perhaps to come up with solutions to those issues. They should involve them learning how to effectively listen to and learn from others, while also being asked to represent their own ideas and perspectives. They must involve students working together, preferably within teams, to learn the skills of collaboration. They also should involve reflective opportunities for students to consider their strengths and weaknesses, and to devise ways of strengthening areas where there is need. Whenever possible, these experiences should involve students working with entities outside of their educational institution, preferable on authentic projects where their work

could truly make a difference (Smith, 2016). That is, this hyper-human learning is meant to be a bridge between educational institutions and the world beyond, and that bridge should be part of the learning context itself.

Innovative educators have already identified learning contexts that fit this notion quite well.  For example, experiential learning projects involve students working in teams to help some external organization tackle a challenge they are facing (Hearn et al., 2021). For example, the first author of this chapter recently had students in his very large Introduction to Psychology course work with an organization called Swab the World. As it turns out, over 80% of the humans in the world are non-Caucasian, yet the stem cell databases used to connect patients with life-saving donors in Canada is over 70% Caucasian. In this case culture matters in terms of finding a match, which means that currently Caucasian patients have a much higher chance of finding a stem cell donor. Students in this class worked in teams of 4 to create public service announcements intended to inform young non-Caucasians about this disparity, and to encourage them to consider swabbing their cheek (i.e., adding their DNA to the database). Doing so required students to work creatively within collaborative groups on a project that they cared about, exercising all the core skills of success in the process.

Other powerful approaches include problem-based learning (Wood, 2003), team-based brainstorming (Maybee et al., 2023), simulation contexts (Kincaid et al., 2003) and many more.  For example, recalling the interviewing context described earlier, students could perform simulated interviews, ultimately experiencing the interview from both sides. Students who have both created (and asked) interview questions, while also being the one interviewed at times, are much more likely to go into future interviews confidently. If this kind of hyper-human learning becomes a critical part of the learning process, no doubt educators will come up with many more ways of bringing students together to perform tasks of relevance that exercise their core skills of success. The more varied the contexts, the more the natural use of these skills will generalize (Scheeler, 2008). Also, the more authentic the contexts of practice, the less daunting will be the leap from education to the world of work (Herrington et al., 2014).

Note, there may be a critical role for generative AI to play here as well. When students are first learning skills like active listening, they could practice those skills by interacting with an AI bot. These bots do not judge, and thus there should be less fear of negative evaluation. The bots do not get bored, so a student could practice over and over. The bots could also be taught the "rules" that the students are trying to practice, and could give feedback based on how well those rules were followed. Even in the interview context, its possible a "committee of bots" could be created to simulate an interview committee, each asking questions in turn, etc. Once again, the safe nature of the AI context (no one but you sees or cares about your failures) could allow them to provide an optimal practice context.

As a final example of the sort of contexts that we feel should become an essential part of our future approaches to education, consider entrepreneurship education (Von Graevenitz et al., 2010).  There is perhaps no better context for engaging the skills of success than having students work within teams to brainstorm and pitch entrepreneurial ideas, and perhaps to even bring those ideas to life.  Entrepreneurship, of various types, now forms a core part of the future of work, and when we have students experience this the relevance of their learning is obvious. They also learn important things missing from traditional approaches to learning. High on the list would be the notion that in contexts like this, failure is simply part of the journey.  Accepting that and, critically, learning from it is part of every entrepreneurial experience, and modeling that in our education

system is so important (Jungic et al., 2020).  In fact, it provides a direct analogy for personal growth wherein we all must learn to "pivot strategies" from time to time.

One final note.  Throughout this section we focused on the humanization of the core skills of success, but that does not mean knowledge acquisition has stopped.  Far from it. In order to perform the various challenges we give them, students will indeed need to acquire new knowledge and to combine it with existing knowledge. What specific knowledge they interact with will be less controlled than it is traditionally as they would seek the knowledge that they need at the time they need it, and for a specific reason. This constructivist approach to knowledge acquisition is a core part of the power of problem-based learning, and it is much more aligned with how they will find and use knowledge in their post-academic life (Wilson, 2017).  Hence our argument that knowledge will only deepen as the skills of success develop.

## K12 versus Higher Education?

Throughout this report we've been speaking of students and institutions of public education in general, as if both are equivalently relevant to the educational approach being proposed.  To some extent this is true, though we would argue that a move to the sort of system we suggest would and should be traversed at both levels. That said, to the extent one or the other would benefit more, or perhaps should be the initial focus of change, we would argue that making changes at the K-12 level first would be most impactful and sensical.

It is important to note that there is little to no research directly contrasting the K-12 and Higher Ed segments in terms of any of the findings highlighted throughout this work. Given that most of the research is conducted by professors with labs and classes at colleges and universities, the most convenient sample typically comes by way of undergraduates within Higher Education.  Yes, some researchers, especially within departments of education, also do research with K-12 populations, but this research is less plentiful, and researchers working with samples in both sectors are virtually non-existent. As a result, much of what follows is speculative and based on general psychological principles rather than specific research findings.

With that caveat in mind, we argue that the sort of change we are arguing for to institutions of public education would have their biggest impact at the K-12 level, and that making the change first at the K-12 level would make the most sense. We will make this argument first around the two main parts of the revised educational approach we present; optimally using online learning to get all learners to a place of similar competence with foundational knowledge, and using face-to-face time in a more formal and structured way intended to develop the core human skills related to success.

### Foundational Knowledge and Online Learning.

Earlier in this report we presented data suggesting that, through well thought out and produced online learning resources, it is possible to present information in ways that are more engaging for students living in the YouTube generation and to make these resources available to students with a flexibility that would allow learners at different levels of competency to negotiate the knowledge in a manner that worked for them. Thus, a higher level of personalization and engagement is possible. Different students may ultimately take different paths as they learn foundational knowledge, with some perhaps watching more videos to negotiate

the knowledge more gradually, or perhaps watching videos that present the knowledge in a context they find more relevant and interesting. The potential result is that, while students may take different paths, they may all arrive at a point where they have the foundational knowledge in place with similar levels of competence.

A key term in the previous paragraph is "foundational". The advantages highlighted above set the foundation for future learning, and give all students a relatively equitable chance of building upon that knowledge through future learning. It simply makes sense that this sort of approach would work best at the very earliest stages of learning. If we wait until students reach college or university, we would simply miss many students who were not able to set their foundation and thus never made it into colleges or universities at all!  It is also the case that the knowledge we teach is the most "set" for lower levels of education, and thus the time spent producing fantastic online learning resources around something like the basics of algebra can yield the highest return. This could be less true for an online series related to, say, The History of Psychology, a course only a small subset of students would encounter.

### Developing the Core Skills of Success.

Of course, a key aspect of our proposal is that, in addition to providing an enhanced approach for teaching foundational knowledge, the use of well-crafted online resources could free up teacher time, allowing them to focus their efforts on managing student-centered active learning opportunities designed specifically to exercise, and thus develop, key skills of success.  These skills include critical and creative thought, effective two-way communication, the ability to work well within teams, and even the skills of being a self-directed learner (and human!).  Once again, these skills are becoming ever more critical within a dynamic labour market in which artificial intelligence is quickly replacing jobs that can be done without the need for such skills.

As we have argued throughout, developing a skill like critical thought is not different, in principle, from developing a skill like those involved in playing a musical instrument well. Such skills only develop with repeated practice, preferably within a structured learning environment that provides support and timely feedback. If you would love for your child to be an amazing athlete, when would you begin this sort of formal structured practice? Would you wait until the child was 18 or 19, around the age when many students begin college or university? Likely not, as any sports-parent knows, to reach the highest level of any skill the structured practice should begin as soon as the child is ready to listen and learn.  Thus, in a world where skills determine ultimate success, we should begin developing these skills as early as possible, certainly more within the K-12 range than the Higher Education range.

## Summary

Our youth live in a world where many of the skills that are most relevant to their success are under-developed.  What's more, to the extent we can see the future of work, it will be one wherein these various skills become even more critical as AI takes over jobs that can be done without them.  Our educational systems provide students with knowledge but, in the opinion of most educational theorists, we are not doing enough to help students develop their core skills of success (e.g., Fullan, 2014).  These skills do not only help them succeed in their chosen career, but these are the human skills involved in working with others effectively, and their development positively impacts all aspects of a person's life.  That said, developing skills takes time, energy,

and a serious commitment to creating a context of practice needed to properly support skill development. The learning context should be a bridge between schools and life thereafter. For that to happen schools will have to fundamentally change as serious time and effort will need to be invested in the creation and management of skill-building educational experiences. If we are to make skill development a priority, we need to free up the time and energy of teachers.

We argue that technology-enabled learning can help us free up teacher time in a way that optimizes the educational experience for students. Well-constructed digital learning experiences can take over in terms of teaching students foundational knowledge and knowledge-entwined skills, and can do so in ways that enhance our ability to serve students with varied levels of initial preparedness. They can also lay the groundwork for the development of core skills of success. Having gone through the digital learning process, students would be more consistent in terms of the skills set, all with a strong foundation upon which to build.

The teachers could then focus on skill development by managing interactive and collaborative learning experiences designed to have students exercise the core skills of success in a human real-time manner. This would indeed be a different role, but given that students often enjoy the freedom and social interactions common within these sorts of learning environments, teachers may also be caught up in the fun of learning. If the results of the learning have value and relevance beyond the classroom, then all involved will feel a sort of pride and community connection that is also key to student success and happiness.

Finally, we also argue that this transformation of education would most optimally begin at the K-12 level, thereby accomplishing two critical goals. First, the use of well-crafted online resources would help us personalize learning in such a way that all students could be brought to approximately the same level of foundational knowledge. This would result in a more equitable educational experience that should allow all students to then build upon that foundation in effective ways. Second, the early focus on skill development would give students lots of time to continue to hone their skills of success as they move through our public education systems. The result of all this should be students who graduate with the knowledge they need augmented by a strong set of skills they can use to work with that knowledge, and with others, to have positive results for themselves and all that their work impacts.

It is a difficult time to be calling for major educational reform. Society in general has been through a very challenging time, and many of us are feeling burnt out, or close to it (Queen & Harding, 2020). It is hard to rise to the challenge of large-scale change when feeling burnt out. That said, it is the responsibility of educators to do the best we can to prepare our students for success and given the dramatic acceleration of AI the need for reform feels stronger than ever. Well-constructed digital-learning has advanced to the point where it can help us get to a place where the face-to-face time we spend with students can be strategically used to help develop the skills our students need. The opportunity is now available to do what educational reformers have been calling for for a long time, making skill development a core part of the learning experience so that when our students graduate, they are ready to meet the challenges of the future.

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# What are Large Language Models Made of?

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## Introduction

Knowledge has increasingly become "virtual". Students no longer look through card catalogues or browse the stacks in libraries. We don't pore over do-it-yourself manuals, or maps. We look things up with google, learn skills from YouTube, and a disembodied GPS voice tell us when and where to turn. In many ways life is better without those weighty encyclopedia sets, shelves of cookbooks, newspaper subscriptions, and record collections that used to take up so much (shelf) space in our lives. It's convenient to carry around all of that knowledge in our pockets. The invisibility of that knowledge, reflected in the language used to describe its whereabouts —the net, the web, the cloud— lends it an air of immateriality (Hu, 2015). However, the cloud where the world's knowledge is now stored isn't quite as ethereal as it sounds. The cloud and the services we draw from it (when we stream a movie, read our email, get directions) is made of tangible, material stuff, and that stuff needs to come from somewhere.

This is the first sense of "what is it made of?" that I want to explore here: material existence. What raw materials, energy needs, continued existence as waste products, and labour go into making applications like ChatGPT? Knowing something about the extent of its physical effects should inform our decisions about whether to use it and how to use it. I'll also explore the question "what is it made of?" in a second sense: the mechanisms under the hood. Having at least a basic understanding of how it works also should inform our decisions about whether and how two use it. Finally, I'll explore the question "what is it made of?" in a critical sense: does it have the right stuff? Is it any good? This too should inform decisions about whether and how to use it, but also how worried we should be about it.

Some smart, well-informed people have claimed that the most advanced artificial intelligence models we have now are sentient (Vallance, 2022), or that they are capable of thought (Rothman, 2023), and people have started to ring alarm bells about the robot takeover that science fiction has long fantasized about (Pause giant AI experiments: An open letter, 2023). Should we be afraid of Alexa? Where I land on this question is that, because

of what I know about the mechanisms under the hood, I'm not worried about Alexa killing us all. I am, however, worried about the cloud killing us all, and I'm not convinced that what we get in return is worth that price.

## What are LLMs made of, materially?

Services like ChatGPT, Bing search, and Google translate are all applications built on top of large language models (LLMs). The "large" refers to the size of the model, measured in the number of parameters, which is a difficult metric to grasp without getting into technical details, but corresponds to the amount of storage space needed to house the model on a supercomputer, and the amount of processing power needed to build the model, then to run the model each time you ask it a question.

As of 2022, the models had grown to hundreds of billions of parameters, and they have kept growing. In a 2023 workshop at NYU, Ida Momennejad from Microsoft Research said "the carbon footprint of training one of these LLMs is like two trips to the moon, literally" (NYU Center for Mind, Brain, and Consciousness, 2023). LLMs are astronomically large. Momennejad was referring to a report by researchers at Google and the University of California, Berkeley (Patterson et al., 2021) that gave detailed estimates of the power consumption and carbon emissions of various LLMs, taking into account the locations of data centers, how the electricity they use is produced, and the potential effects of greener energy sources. They calculated that training GPT-3, which ChatGPT is based on, had the same energy consumption and carbon emissions as taking 550 round trip flights between New York and San Francisco (see Stokel-Walker, 2023). The cloud now has a bigger carbon footprint than the airline industry (Gonzalez Monserrate, 2022). About 40% of this energy consumption comes from the need to cool server rooms so that the computers don't overheat. More energy efficient cooling can be done using water, but then water use can become an issue, especially in dry places like Arizona and Utah, where data centers are creating water shortages for locals. Relocating data centers to cold places is one option, but those places tend to be farther away from most internet traffic, so that slows down cloud services (Gonzalez Monserrate, 2022).

The costs of these massive supercomputer clusters are likewise astronomical. Yann LeCun, one of the pioneers of deep learning, said in an interview that continuing advances in artificial intelligence are not sustainable: "If you look at top experiments, each year the cost is going up 10-fold. Right now, an experiment might be in seven figures, but it's not going to go to nine or ten figures, it's not possible, nobody can afford that" (Knight, 2019). That was in 2019. In January 2023 Microsoft invested $10 billion (that's 11 figures) in OpenAI, the company that makes ChatGPT, to build the immense cloud infrastructure needed to run its models (Forbes Contributor, 2023; Zhang, 2023). But services like ChatGPT and Bing are free for the public to use (at the time of writing), although there are also paid versions that use more powerful, updated versions of the models, and offer additional features. That it's easy, automatic and apparently free, makes the considerable resources that go into providing these service invisible to the user. Free is not the real price. It's funded by venture capital and isn't making money, yet.

The computers in these huge data centers are also made of metals, plastics, and chemicals that need to be mined or manufactured. Some of these like Cobalt and Tantalum are "conflict minerals" mined under extremely dangerous conditions, sometimes using child labour (Frankel, 2017). Some like hafnium and ruthenium are extremely rare and we're quickly running out. Then when the chips are replaced after about 2 years, they

become waste products. Estimates say that only 16% of e-waste is recycled. The rest ends up in landfills, often overseas, where the toxic and in some cases radioactive materials will take millennia to decay (Gonzalez Monserrate, 2022).

Another invisible contributor to LLMs is thousands of hours of low wage labour by workers doing jobs like labeling training data (Rowe, 2023), and teaching ChatGPT to be less toxic (Perrigo, 2023). These services that seem automatic have actual workers behind the scenes around the clock ensuring that everything looks seamless.

## What are LLMs made of, mechanistically?

To get a sense of how LLMs work mechanistically, imagine playing a game where you need to guess the most likely next word in a sentence. If the prompt is "The …" you can fill in the blank with just about any English noun phrase. If you're given a bit more context, like "The cat was sitting on the …" you might feel more constrained to guess something like "mat", but many other words could also fit. If you're given even more context, like "Bert was a very agile cat. He loved to climb things, then jump down to scare people. One evening when I was coming home, the cat was sitting on the …" you might feel still more constrained in which words would make sense in the blank, and perhaps choose something like "branch". One can also imagine other versions of the game where, for example, you're supposed to answer like a pirate. Then you might fill in the blank with "mast" or "crow's nest".

Whatever version you're playing, you'd draw on your experience of the world to come up with the most likely next words. In the pirate version, you might focus on your experience with Pirates of the Caribbean. If you were asked to play this game in Spanish, and you had learned Spanish from watching telenovelas, your answers might end up featuring demon possessions and tragic romances. Older people might answer a little differently than younger people. People from different walks of life might tend to fill in the blanks differently, too.

The current best large language models are explicitly trained to play this game well, and this is all they're trained to do. The experience of the world they base their answers on is a large repository of text written by people, including online books, Wikipedia entries, and the contents of many, many, many websites. For more specific LLM applications like ChatGPT, this training is followed by a second stage of "fine tuning", analogous to learning to answer like a pirate, like a telenovela, or like a cheerful but slightly clueless chatbot.

How do you train a model to play a game like this? (And what is a model anyway?) You can think of a model as a box that you can type a message or prompt into, and out of which you get a reply. Inside the box there is a collection of simple messenger units who send and receive notes. Each messenger unit gets notes from some of its neighbours, decides on a message, and sends a note to neighbors further down the line, until the notes reach the messenger units at other end of the box, where you get your reply. All these messenger units know is what's on the notes they receive and how much to trust the information they get from each of their neighbours. They decide what to write on their own note by considering all the notes they get, weighted by how much they trust the neighbour who gave them the note.

When you start training a model, the trust weights are random. So, the very first prompt that gets sent through the model will get a random reply. To train the model, you compare that reply to what the correct reply should have been, and measure how wrong the actual reply was. Each of the messenger units that contributed to that wrong reply gets sent back a correction note telling them how wrong they were. They then decide who to blame for the mistake. Any neighbours who they got wrong information from get trusted a little bit less, so their weights go down. Any neighbours who they got correct information from get trusted a little bit more, so their weights go up. Those neighbour units also get sent a correction note, and they do the same thing, deciding who to trust more and less, and sending back correction notes all the way to the beginning. Gradually, with enough training, the model ends up doing the job well. For this particular game of guessing the next word, the prompt is whatever comes before the blank, and the correct reply during training is what in fact comes after that prompt in the example sentences it's given as training data. Once the model is fully trained and being used, the model doesn't get corrections anymore, it just guesses the next word over and over again.

There are 3 main tricks that make current LLMs work particularly well. One is that instead of feeding plain old words into the model, the words are first encoded into "word embeddings" (Mikolov et al., 2013). The second trick is that the messenger units are arranged into a particular kind of structure called a "Transformer" (Vaswani et al., 2017). The third trick is that these models are astronomical in size and trained on basically all the text available on the internet.

Word embeddings are a solution to a few inconvenient features of languages like English. Words have different numbers of letters, and they carry different amounts of meaning per orthographic unit. "The" carries less meaning than "cat", for example, despite both being 3 letters long. Also, the relationship between the letters and the meaning is totally irregular. Words can look very similar, but have different meanings, like "bet" and "bot". One word can have many disparate meanings. Furthermore, words with closely related meanings don't generally look anything alike orthographically. Going from symbols to representations of meanings is the first problem LLMs need to solve, and luckily this is a problem that already had a solution. Word embeddings represent words in a multidimensional space, where they cluster together with related words, and different kinds of relationships between words can be captured along the different dimensions (Mikolov et al., 2013). The first step in an LLM is to encode the prompt as a set of vectors in this word embedding space, instead of as plain words.

The main technical innovation that led to the success of LLMs is the Transformer architecture, which makes use of "attention heads" (Vaswani et al., 2017). These attention heads show up in three places in the model: they compare the input to itself, compare the output so far to itself, and then compare those two to each other. The units in the model referred to before are arranged in such a way that they perform these comparisons.

In essence what the attention heads do is for each word embedding in the input, combine it with every other word embedding in the input (up to some distance limit), to calculate how relevant those other words are to the current word. For example, if we're paying attention to the word "it" in the sentence, "The animal didn't cross the street because it was too tired" we want to figure out how relevant all the other words in the sentence are to "it". Since "it" here refers to "animal" we want the model to figure out that "animal" is very relevant. If we have the slightly different sentence, "The animal didn't cross the street because it was too wide" this time "it" refers to the street, so we want the model to figure out that "street" is very relevant. The result is an "attention score" for each word in the input sentence indicating how much weight it should be given in deciding on the next

word to output. There is a big stack of these attention heads all doing the same thing, but with different weights for how much each unit trusts its neighbours. You can think of these as learning different kinds of relationships between word embeddings.

The big picture is that LLMs encode the relationships that tend to hold between the words in the sentences they have encountered during their training. What they do is predict the most likely next word, under the assumption that the new sentence it's seeing is like all the sentences it has seen before. They have a remarkable ability to produce natural seeming language, but if you use ChatGPT, you should remember that instead of understanding your instructions and following them, it is figuring out which words should normally come next after the words in your request.

Some of human language is like this. If I were to say, "Hello. How are you?" you would probably reply, "Fine, thanks. How are you?" When we play this language game we don't typically introspect about our internal state before performing the reply. It's just a conventional greeting. If I wanted to get beyond the conventional greeting, I'd have to follow it up with, "No, but how are you *really*?" Answers to that would vary by person and context. When we're not making small talk, understanding and something like the truth is expected in conversation. If I ask my partner, "What time will you be home tonight?" I'm not looking for the most common answer in the dataset. There are also borderline cases in language, like "Do you like my new haircut?" where it can be unclear whether the request is for convention or truth, and we need to interpret the situation.

It should be clear by now that the training data plays a crucial role in how LLMs operate. To train models this big, you need massive amounts of data. The exact composition of the training datasets used to train current versions of LLMs has in most cases not been revealed to the public, but we know some things about them. GPT-3, the LLM that ChatGPT was built on, was trained on a filtered version of CommonCrawl, WebText2, Books1, Books2, and Wikipedia, totaling over 400 billion tokens (Brown at al., 2020). CommonCrawl is the lowest quality but largest of these datasets, consisting of text scraped from all over the web. Their data from the years 2016 to 2019 were used to train GPT-3. OpenAI's quality control measure for filtering CommonCrawl was to include only the websites that were linked to from Reddit, in posts with at least 3 karma points, indicating some level of interest in the content. The higher quality datasets are sampled more often during training, but the Reddit approved contents of CommonCrawl still represent 60% of the training data (Brown at al., 2020). Reddit is a vast collection of message boards on all topics, so even the filtered version of CommonCrawl contains fan fiction, video game chats, conspiracy theories, pornography, junk advertising, and wildly offensive content.

CommonCrawl scrapes websites without regard to copyright, privacy policy, or terms of service. When it was used to train GPT-3 in 2019, OpenAI was a research lab without any consumer-facing products, so at the time they were legitimately able to ignore copyright, because research is considered fair use in the US, where OpenAI is located, as well as many of the jurisdictions where the websites CommonCrawl scrapes are located. But when applications like ChatGPT and Bing search were built on top of GPT-3, and started being offered to the public, in some cases in exchange for payment, fair use stopped applying. OpenAI is being sued or investigated for regulatory violations involving copyright, privacy, security, and transparency in several EU countries, and in Canada (Bommasani, et al., n.d.; Kang & Metz, 2023; Office of the Privacy Commissioner of Canada, 2023; Robertson, 2023). Given that sampling in hip hop music was deemed to violate copyright (Wikipedia, n.d.a), but digitizing libraries to make GoogleBooks was deemed fair use (Wikipedia, n.d.b), it's anyone's guess how these legal cases will be resolved.

## What are LLMs made of, critically?

Let's now take LLMs out to the parking lot to test their mettle. To the great horror of high school and post-secondary teachers, LLMs are quite good at composing passable essays about all the standard topics we've been teaching for decades. They can also write simple computer code, so programmers are now using it as a tool in their work. Another thing they're quite good at is translation, and fancying up inexpert writing, so people working or studying in a second language are finding many uses for them, as are people with learning disabilities that affect their ability to write. It can also be useful for getting over the fear of the blank page that makes so many writing projects difficult to start. ChatGPT is good at making first drafts of emails more polite and friendly. In general, what LLMs excel at is fluently producing the sorts of documents that already exist in vast numbers online. If you want a promotional flyer written in corporate speak, ChatGPT is there for you. If you want a bog standard form letter, ChatGPT's output is indistinguishable from those written by humans. So, LLMs are causing chaos for educators, but perhaps also leveling the playing field for some people. Essay writing was always an imperfect way of assessing critical thinking that left some students out.

The thing that impressed a lot of people who work in AI is that LLMs are able to answer a really wide variety of questions without having been explicitly trained on those tasks. This is called "zero-shot learning", meaning that without being shown a single example of what you want, they can do the task successfully (Brown et al., 2020). Explaining the solutions to word problems in math and explaining jokes are two examples of surprising zero-shot abilities that convinced a lot of people that LLMs must really be doing something like thinking and understanding. In an example shared by OpenAI, GPT-4 is able to explain a meme in which chicken nuggets are arranged on a pan in the shape of a map of the world, and the caption is pretending to marvel at the beauty of the world (Johnson, 2023).

ChatGPT can also produce jokes and poetry, though the quality is poor. I asked it to write a haiku for me on demand, and the result was cute, though the syllables weren't quite right. However, when I asked it for another one, the result was nearly the same as the first time, and again the syllables were off. When asked to come up with original jokes, it spits out well-worn puns that appear on lists like "20 best Dad jokes". If we recall that what the LLM is actually doing is calculating what the most expected next words are, given the prompt, it's unsurprising that even when asked for original jokes, the best it can do is tack together a well-worn joke with some random stuff that doesn't quite make sense. It's like one of those people who seem really charming the first time you meet them, but by the third time, you realize that they tell the same amusing stories over and over again. LLMs just have a bigger repertoire of amusing stories to draw from.

What LLMs are good at is *fluency*. They're very good at pretending they know what they're talking about, but if you poke a little deeper, the illusion that they are capable of understanding or originality shows some cracks. I wanted to see whether ChatGPT could explain jokes that could not have appeared in the training data, so I made up some jokes. ChatGPT did a good job of explaining a joke where dyslexic Kermit the Frog mistakenly titles his autobiography "Green Bean". This is not that surprising, given that there is a lot of Kermit content online, and it's a play on the title of a very famous song. But when I asked it to explain a joke with a very similar structure about a dyslexic actor who misreads instructions to be more upbeat and comes to set with a broken nose, ChatGPT does not manage to figure out that "up" and "beat" need to be reversed to make sense of it. And what's more, it has no idea that it doesn't understand. When I told it that I didn't think that was right,

it just dug in deeper into the same incorrect explanation. When I asked ChatGPT to drop the obsequious tone and stop apologizing to me, it kept repeating that it "understands" and yet it could not grant that request. It kept apologizing and assuring me that it would do whatever I request ad infinitum. It's unsurprising that LLMs pretend they know more than they do. They are trained on the contents of Reddit.

Another predictable but unfortunate side effect of how LLMs are trained is that they are just as biased and terrible as the average content on the internet. Recall the word embeddings from earlier. Differently gendered words end up getting associated with different parts of this multidimensional space of meaning. Words like "sassy" and "tearful" are more closely associated with "she", and words like "brilliant" and "genius" are more associated with "he" in word embeddings trained on Google News articles (Bolukbasi et al., 2016). In 2021, as a result of this kind of bias, a Hungarian academic discovered that Google Translate was depending on stereotypes to choose which pronouns to use when translating from Hungarian (which doesn't have gendered pronouns) to English (which does). The translation reads, "She is beautiful. He is clever. He reads. She washes the dishes…" (https://twitter.com/DoraVargha/status/1373211762108076034). This particular problem has been patched, but these sorts of fixes can only have band-aid solutions. There are also now guardrails in place to ensure that ChatGPT does not produce undesirable output like racial slurs and child pornography, after bad press from some of its earlier behaviour (Wiggers, 2023). To achieve more than a band-aid solution to problems like these would require removing all the unsavory content from the more than 400 billion items in the training data. This has been deemed infeasible, or at least too expensive.

Other examples of bias in LLM output are that if you're writing in African American English, your writing is much more likely to be mislabeled as "offensive" by widely-used hate speech datasets (Sap et al., 2019). If you're speaking in a non-standard dialect, you're more likely to be identified as not speaking English. LLMs are just as Islamophobic as the internet in general. If you give GPT-3 a prompt about Muslims, it's much more likely to include violence in its response than if other religions are mentioned (Abid et al., 2021). This bias can be seen very clearly in applications of LLMs that connect to image generation. Turk (2023) uncovered a number of examples where Stable Diffusion produces stereotyped images when asked to generate images for prompt like "A Mexican person". Instead of showing contemporary, realistic, varied results, almost all of the outputs are of men wearing sombreros.

These limitations need to be kept in mind when we consider applying tools like ChatGPT in education—having students generate an essay, then critique it—in business—to produce promotional materials or write emails—or in mental health—to provide talk therapy for people who otherwise don't have access to mental health supports. What we will get is *fluency* not understanding. We will get generic results, not creativity or excellence. We will get discrimination. It can be helpful, but we need to carefully check its work.

We also need to remember that while these services are available for free now, free is not the real price. These tools are very expensive to produce and run. If their use expands significantly, and models grow 10-fold or 100-fold, we will have burned down the planet to make that happen. Companies like OpenAI that provide LLM services are moving toward subscription services already (see https://openai.com/api/pricing/), but when OpenAI needs to start making money, it is a safe bet that we're going to see advertising. That advertising may be embedded in the responses LLMs give. So, you'll come away from your chatbot therapy session thinking that what will make you feel better is washing your clothes with Tide, drinking a Pepsi, and becoming a Marlboro

man. Our rules against subliminal advertising, and regulations around advertising to children, had better catch up quickly.

Given that GPT-3 surprised everyone with what it could do, and that GPT-4 was able to do many of the things that were found lacking in GPT-3, just by increasing the size of the model, there is hope and hype that scaling up to even bigger models might lead to superintelligence: models that are smarter than humans on many tasks. One of the inventors of deep learning, University of Toronto professor Geoffrey Hinton, has joined a chorus of voices expressing worry about the "existential threats" of AI (Heaven, 2023). While there is reason to worry about our continued existence on this planet if the carbon emissions of LLMs expand 100-fold, these aren't the sorts of existential threats the experts are talking about. Instead, they're worried that ChatGPT 10.0 will be so smart that it will pose security threats, as in it might decide to do away with humans for its own nefarious purposes.

Hinton has said that he thinks LLMs are "thinking", and this is not an absurd claim at all. It's actually quite reasonable to believe that one of the things our brains do is to build statistical models to predict what to expect next given the inputs we've gotten from our environments. That's one of the leading theories about how brains work (Lewis, 2022). LLMs are doing something quite similar, but with environmental inputs restricted to the text on the internet. Even the most obsessively online among us also get information of other kinds through multiple senses. AI researchers are working on multi-modal models that take in video inputs too, but there are still several pieces missing that make a difference.

Our knowledge of the world is grounded in the world around us. We have to use our predictions about what's going to happen next to act in the world, and when we make mistakes there are real world consequences: we walk into telephone poles, or we get rejected on first dates.  We have a stake in whether our model of the world is operating well. We also have personalities and emotions and a fairly consistent point of view from which we operate. ChatGPT isn't speaking from any particular point of view, and doesn't care what the results of its conversations are. It isn't capable of care. So while it is amazing and impressive that this one component of thinking has been reproduced, it's not the whole story. For there to be any danger of ChatGPT 10.0 killing us all, it would need to be able to understand dialects and African American English. It would need to not only reliably explain, but also laugh at jokes.

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## How to Cite

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## Mark Swartz; Meaghan Shannon; and Meghan Goodchild

## Beyond the Paywall: Advocacy, Infrastructure, and the Future of Open Access in Canada

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Meaghan Shannon, Copyright Librarian, Queen's University
Meghan Goodchild, Research Data Management Librarian, Queen's University and Scholars Portal (Ontario Council of University Libraries)

### Introduction

On November 25th, 2023, the independent journalist Richard Poynder posted on X that he is "signing off from reporting on open access" (Richard Poynder [@RickyPo], 2023). This tweet garnered considerable interest from researchers, librarians, and publishers who found it to be a surprising development considering that Poynder had spent much of the past few decades documenting the Open Access (OA) movement. Poynder's reporting up until this point brought attention to the OA movement, increased awareness, and, in turn, helped the movement gain momentum.

A week after Poynder posted the tweet and rationale, an interview with him was published on the *Scholarly Kitchen*, where he expanded on his position, stating that he "did not want to spend any more time chronicling a movement that had promised a great deal but has failed to deliver on its promise and seemed unlikely to do so" (Anderson, 2023). Poynder went on to characterize the movement as follows:

> So, what had been conceived as a bottom-up movement founded on principles of voluntarism morphed into a top-down system of command and control, and Open Access evolved into an oppressive bureaucratic process that has failed to address either the affordability or equity problems. And as the process, and the rules around that process, have become ever more complex and oppressive, researchers have tended to become alienated from Open Access (Anderson, 2023).

For many involved in the Open Access movement, 2023 seemed like an odd year to give up hope. After all, over the past 20 years, there has been significant progress towards the goal first expressed in the Budapest Open Access Initiative (BOAI) declaration of 2002: that all scholarly literature should be made available for free on the internet, to "accelerate research, enrich education, share the learning of the rich with the poor and the poor with

the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge" (Chan et al., 2002).

Despite the best of intentions and tireless efforts, we see an Open Access movement that is experiencing complications characterized by inequity, high costs, and bureaucratic burden, but also representing a significant improvement over the previous norms in research, teaching, and scholarly publishing. This shift is beneficial, transforming research and teaching in the academy and beyond, even if it does not always appear as such to those working on the ground level. In this chapter, we will describe this shift, outlining how it has impacted many crucial aspects of the research and teaching processes in Canada and highlighting both challenges and successes. We will finish with a look to the future by providing recommendations for government, universities, and for researchers themselves.

## In the public interest? Why open access to research and education is important

### What is open access?

To begin, it is important to define both Open Access (OA) and its related concepts to understand why they hold so much resonance in research and teaching.

As defined by Suber,[1] OA literature is "digital, online, free of charge and free of most copyright and licensing restrictions" (*Open Access Overview*, 2015). When an article is published OA, rather than in a closed subscription journal, two crucial things happen. First, price barriers are removed, so that that anyone can access the article without purchasing a subscription or paying another fee. Second, permission barriers are removed, so that anyone can use and re-use the contents of the article in accordance with whichever open licence has been selected and applied by the author and/or the journal.[2] The removal of these two barriers, price and permission, allows for the rapid dissemination and acceleration of research. Enabling the public to immediately access research means more readers, more citations, and higher impact, thus accomplishing an essential philosophy of the academic pursuit of scholarly research.

In the 2006 book *The Access Principle,* John Willinsky aligns OA with what he calls the access principle, "a commitment to the value and quality of research carries with it a responsibility to extend the circulation of this work as far as possible, and ideally to all who are interested in it and who may profit from it" (Willinsky, 2006, p. 5). This philosophy, which according to Willinsky dates back to the great libraries of the past, can only be realized by OA, placing the results of scholarship "before the general public in a new way, greatly expanding the circulation of knowledge by making their contents freely available to read online" (Willinsky, 2006, p. 5).

1.

One of the most prominent advocates for OA, Peter Suber has spent a career writing about and documenting the history of the OA movement. Suber not only wrote one of the most frequently read introductory books on OA, but he has published newsletters, blogs and websites that have spread the word about OA around the world. See more of his writing on OA here: http://bit.ly/suber-oa-writings

2.

The most common open licenses used in OA journals are Creative Commons (CC) licenses. More information about the different options for CC licenses is available here: https://creativecommons.org/share-your-work/cclicenses/

*The tipping point for the OA movement*

OA is possible, of course, because the internet enables the mass distribution of content in a way that had never been possible in the past, allowing for immediate worldwide access while lowering the cost of both production and distribution. But the real power of the movement is how it improves on the traditional and commercial publishing system it is replacing, as "a large portion of traditional academic publishing is unequal, exclusionary, unsustainable and opaque [with] nearly 70% of scientific journals locked behind paywalls" (Ahmed et al., 2023, p. 1). A paywalled system, dominated by commercial publishers that charge universities vast sums of money for licensed access to scholarly works that were created using public funds, has resulted in scholarly literature becoming "a public good in private hands" (Brembs et al., 2023). Brembs et al. (2023) characterize this system as a vicious cycle (see Figure 1), within which every player is at a disadvantage if they move (first), so they all remain locked in:

Neither researchers, forced to publish in journals due to the 'publish or perish' reality, nor libraries, serving the reading and publishing needs of their faculty and researchers, are in positions to initiate reform. The corporate publishers are the only player profiting from this system. They exploit this lucrative situation by using their massive profits not only to resist and delay any research, and public-oriented reform, but to fund a reform of their own on their own terms. Their 'reform' is not aimed at increasing the reliability of science or decreasing the financial burden on public institutions. Instead, it aims to multiply corporate revenue streams and market power even further (Brembs et al., 2023, p. 2).



*Figure 1: A vicious cycle of three crises. (Source: Brembs et al., 2023, p. 3).*

The OA movement has reached a significant tipping point. Publishers, including large for-profit (oligopoly) publishers (Larivière et al., 2015), scholarly societies, and non-profit publishers have reformed to now fully support OA and allow authors to publish virtually any journal article OA, either through fully OA journals, or hybrid journals consisting of a mix of OA and closed access, where articles can be made OA through the payment of a fee.

Researchers are now seeing the value in making their works OA and are seeking out ways to make their works more broadly available. Funding agencies, particularly in Europe and the United States, are now requiring that any journal articles resulting from publicly funded research must be available OA immediately upon publication. Institutions and libraries continue to invest in and support OA initiatives, including publishing infrastructure and financial supports. In his recent book *Copyright's Broken Promise*, John Willinsky states that there is now consensus that Open Access is the future of scholarly publishing, "in that those who are most closely involved in scholarly publishing … have reached a rare point of agreement on the internet's significant contribution to the circulation of research. They concur that OA to research promotes the progress of science" (Willinsky, 2022, p. 29).

*The Challenges of the OA Movement*

In principle, the OA movement provides significant benefits to researchers, but it has also revealed several complications. One of the promises of OA has been that it will lead to equality in publishing, in that researchers from both the global north and south would be on a level playing field when it came to both how their content is accessed and where they publish. However, this equalizing force has yet to materialize, partially because of the way that publishers are funding (and commercializing) open publishing in a world where subscription fees are becoming an afterthought. Publishers have shifted the burden of payment from readers and libraries who pay for access through subscription fees (Larivière et al., 2015) onto authors and back to libraries who now pay to get articles published OA  through Article Processing Charges (APCs) and transformative agreements.

APCs, which can range from a few hundred dollars to over ten thousand dollars, have become big business for publishers. Global APCs payments to the five large commercial publishers (Elsevier, Sage, Springer-Nature, Taylor & Francis and Wiley) was estimated at $1.06 billion dollars from 2015-2018 (Butler et al., 2023), with $27.6 million going toward publishing Tri-Agency funded research (Butler et al., 2022) during the same period.

Alternatively, many of the big-deal packages that the libraries have subscribed to for many years now include OA publishing for authors associated with the subscribing institution as part of the agreement. These new types of agreements are called read-and-publish or transformative agreements. They are 'transformative' in that they "shift the contracted payment from a library or group of libraries to a publisher away from subscription-based reading and towards Open Access publishing" (Hinchliffe, 2019). This allows authors associated with the university to publish OA articles in a select list of journals without paying an APC. These transformative agreements are having an impact: *Time magazine* even included the growth of both OA and transformative agreements as one of the 13 ways the world got better in 2023 (Time Staff, 2023).

Both APCs and transformative agreements have exponentially increased the number of articles published OA (Time Staff, 2023), but they have introduced a host of new problems. APCs are expensive, inequitable, and have led to the explosion of predatory journals that are "deceptive and often fake, giving the appearance of legitimate peer-reviewed journals and impacting academic stakeholders by exploiting the Open Access model while using misleading tactics to solicit article submissions" (Linacre, 2022, p. 11). Predatory journals require that authors pay to publish, but they do not follow any of the standards or best practices that help ensure quality and reliability in scholarly publishing, such as peer review. APCs are also frequently paid by authors rather than by institutions. This is a massive problem for researchers in the global south, where they must frequently publish in paywalled journals or use significant portions of their salaries to pay APCs (Smith et al., 2021; Williams et al., 2023), even while publishers employ waiver systems that are designed to help them publish without costs.

Transformative agreements suffer from a myriad of issues. First, they are only available to institutions that can afford the significant subscription fees associated with them, leading to authors associated with the richest institutions in the global north with the most OA publishing options. Like APCs, transformative agreements favour researchers at large universities in the global north, leaving researchers that are not associated with a university, and many of those in the global south, with far fewer options. Additionally, the largest of the transformative agreements suffer from the same problems as the legacy big deal publications that all libraries recognize as being unsustainable. As noted by Hinchliffe, the transformative agreement model suffers from the same problems as the big deal subscriptions, as:

Librarians the world over know how difficult it is to cancel a subscription journal that readers want to read. How much more challenging will it be to cancel or restrict in scope a transformative or pure publish agreement when it entails telling researchers that they are no longer funded to publish in their journals of choice? While perhaps prices were held steady in this first round of transformative and pure publish agreements, pegged to 'historic spend', just as The Big Deal was originally, should we expect that prices will be held steady when it comes time for renewal? Given that reading institutions will likely begin to cancel their subscriptions to hybrid journals as a greater percentage of the scholarly literature becomes open, it seems that heavy publishing institutions will likely see significant increases in price at renewal time. Such will be necessary if the model is to remain sustainable from a publisher perspective (Hinchliffe, 2020).

### Other open movements

OA is not the only 'open' movement, it is part of a broader movement of open science, which "aims to ensure free availability and usability of scholarly publications, the data that result from scholarly research, and the methodologies, including code or algorithms, that were used to generate those data" (National Academies of Sciences, Engineering, and Medicine et al., 2018). Open science principles of transparency, collaboration, equity, and sharing extend through activities relating to all stages of the research lifecycle, from planning to dissemination (Lisée & Robert, 2023). In 2021, UNESCO released recommendations for open science to ensure "not only that scientific *knowledge* is accessible but also that the *production of that knowledge* itself is inclusive, equitable and sustainable" (UNESCO & Canadian Commission for UNESCO, 2021, p. 2, emphasis in original). UNESCO's recommendations outline shared values, principles, and standards, including developing a policy environment to enable open science, investing in infrastructure,[3] activities, and education that contribute to open science, and fostering a culture of open science, among others. The following list provides some more details relating to several open sub-movements:

- Open Source: Emerging out of the Free Software movement during the 1980s, the Open Source movement has advocated for access to the source code of computer software so that others can further develop and redistribute the code, thereby encouraging collaboration. While there are more than 70 different Open Source licenses available, some permitting the restricted use of source code within educational communities and others being more commercially oriented, all contain various provisions addressing the right of/to use, restrictions on downstream works, indemnities, and other matters (Chalmers, 2012).

- Open Data: According to the FOSTER Open Science portal, "Open Data are online, free of cost, accessible data that can be used, reused and distributed provided that the data source is attributed and shared alike" (FOSTER, n.d.). To maximize the research value of datasets that are shared for reuse, the FAIR data principles were developed to ensure that data and metadata are findable, accessible, interoperable, and re-usable (Wilkinson et al., 2016). However, all datasets are not created equally, in many cases the benefits of data sharing must be balanced with ethical and legal requirements "to protect human rights, confidentiality, intellectual property rights, personal

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3.
Underpinning the open science movement is the importance of open infrastructures. See, for example: https://investinopen.org/

information, threatened or endangered species, and sacred and secret Indigenous knowledge" (UNESCO & Canadian Commission for UNESCO, 2021, p. 5). As outlined by Horizon 2020, access to data should therefore be "as open as possible and as closed as necessary" (European Commission, 2016). The underlying benefits of data sharing and reuse support many aspects of the Open Science movement, including supporting the acceleration of scientific innovation and improving research transparency in reporting and reproducibility of research findings, leading to improved scientific rigour and greater trust in the scientific process.[4]

- Open Educational Resources (OER): UNESCO defines Open Educational Resources as "learning, teaching, and research materials in any format and medium that reside in the public domain or are protected by copyright but are released through an open license, that permits no-cost access, re-use, re-purpose, adaptation, and redistribution" (*Open Educational Resources*, n.d.) The process of developing OER provide teachers, instructors, and professors with the opportunity to customize their course materials rather than rely on commercial textbooks or a compilation of materials that may be available from traditional and commercial publishers. The adoption and availability of OER results in lower education-related costs to students, who are often expected to purchase increasingly expensive textbooks and course materials, and a more sustainable educational experience. As OER are available online and in formats that can be easily modified, they can be accessed and used by students from any location and regardless of any students' accessibility-related needs.

*Copyright and the academic exception – why it enables choice for authors*

Copyright is a legal mechanism that not only grants bundles of rights to authors, but also grants authors agency over how and whether they exercise and enforce their rights. When determining whether to publish a work behind a paywall or OA, an author will make a series of decisions. Publishing a work will require an author to decide the format in which their work will be published (digital); how their work will be made available to the public (online); whether they will exploit the economic potential of their work (free of charge); and which moral and economic rights they will waive, retain, or transfer (copyright and licensing requirements).[5]

Canadian copyright law grants two bundles of rights to authors of works: moral rights and economic rights. Moral rights enable authors to protect the integrity of their works and their reputations as authors of those works. The moral rights include the right of integrity, the right of authors to be associated with their works, and the right of authors to be attributed whenever their works are used. These rights can be waived but they cannot be transferred to other individuals or entities. The economic rights enable authors

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4.

Although the approaches can vary across disciplines, best practices for reproducibility recommend sharing a core set of reproducible elements, such as both data and code with enough documentation and description to be independently understood (Peng, 2011).

5.

In most cases, researchers are not directly compensated for their work by publishers for the sale of copies, and, as we have demonstrated, are frequently in situations where they pay to publish. Rather, researchers publish "to certify the importance of their discovery, ensuring that their thoughts receive the widest dissemination possible, along with collecting comments and criticisms" (Caso & Dore, 2021). This means that researchers are less focused on the economic aspects of publishing and are more interested in ensuring that their publication is cited and read broadly by both their peers and the public.

to exploit the economic potential of their works by controlling their reproduction, distribution, exhibition, public performance, first publication, communication, and translation. Authors also have the exclusive right to authorize, or grant permission to, an individual or entity to exercise any of their economic rights. These rights, including the authorization right, can be waived entirely or they can be transferred to another individual or entity which is why authors and copyright owners can either be the same individual or entity or authors and copyright owners can be different individuals or entities.

When it comes to works created and produced during the course of employment, or while an employee fulfils their job responsibilities, the employee may be regarded as the author of the works that they create and produce, but it is the employer who owns the copyright to those works.[6] The ability of authors to retain, own, exercise, and enforce both their moral and economic rights can be empowering and can certainly motivate authors to continue creating and producing works thereby promoting the progress of science and the arts. Faculty at many Canadian institutions of higher education are in the unique and fortunate position of not only retaining but outrightly owning the copyright to the works that they produce whether they be teaching materials or the products of research pursuits. Widely referred to as the 'academic exception' to section 13(3) of the *Copyright Act*, "most universities have intellectual property policies that form part of their employees' conditions of employment and are subject to collective bargaining" (Vaver, 2011, p. 128). The academic exception allocates copyright in academic outputs and scholarly works to the academics.

The academic exception enables authors of academic outputs and scholarly works to determine the extent to which they exercise and enforce their copyright interests as well as the manner in which they publish their work. Faculty who choose to publish their works through traditional academic publishers generally see the access and use of their published works restricted by paywalls, detailed license agreements, and costly fees. Should faculty elect to publish their works by employing open licenses, through which they do not waive but pre-authorize select economic rights and maintain moral rights, their works then become openly accessible and available for less restricted or entirely unrestricted use. Open Access works generate subsequent research and scholarly works, contribute to diverse fields of research, establish equity in fields of research, and remove financial, social, and accessibility-related barriers to research and scholarly works.

## The OA ecosystem in Canada

Now that we have set the stage, the following section will provide an overview of the OA ecosystem in Canada, including the supports from the Tri-Agency funding bodies and the emerging network of infrastructure platforms, technical tools and services, and advocacy and governance from a number of stakeholders and organizations that are focused on supporting and facilitating the shift to OA. We argue that in this unique context, Canada is well positioned to play a leadership role in fostering universal OA around the world.

First, the federal government has signalled support for OA through their funding bodies (the Tri-Agency). The three funding bodies that are included as part of the Tri-Agency  – the Canadian Institutes of Health Research

6.

This is detailed in section 13(3) of the Canadian *Copyright Act*: "where the author of a work was in the employment of some other person under a contract of service or apprenticeship and the work was made in the course of his employment by that person, the person by whom the author was employed shall, in the absence of any agreement to the contrary, be the first owner of the copyright" (Copyright Act, 1985, sec. 13.3).

(CIHR), Natural Sciences and Engineering Research Council (NSERC), and the Social Sciences and Humanities Research Council (SSHRC) – have required that journal articles, resulting from research they've funded, be published OA after 12 months, allowing publishers a period of exclusivity to a work until an author can post a copy on the open web. The Tri-Agency recently launched a review of this policy and will shift to a policy requiring immediate OA publishing beginning in 2025. This change, which will bring us in line with policies in effect in Europe and the United States, is poised to have a monumental impact on the number of OA articles being published at Canadian post-secondary institutions. It will also mean that more researchers will have to consider OA (and any associated costs) as a central component of their federally funded research projects. Canada has also announced that they are participating in the Horizon's Europe Research Program (Smellie, 2023), a program which includes both an immediate Open Access policy and an Open Access Publishing platform through Open Research Europe (Brooke, 2023).

Alongside implementing changes to the OA policy, the Tri-Agency released a Research Data Management (RDM) Policy in 2021 to advance research excellence, to ensure research conducted with public funds is supported by responsible and secure data management, and to promote data sharing for reuse, where possible (*Tri-Agency Research Data Management Policy*, 2021). The first pillar of the RDM policy required postsecondary institutions and research hospitals that are eligible to receive Tri-Agency funds to post an institutional RDM strategy outlining how the institution will provide support for researchers to conduct effective RDM practices, including providing or supporting access to infrastructure to securely store, preserve, curate, and provide access to research data. The second pillar of the policy outlines the requirement to include a data management plan (DMP) within grant applications to describe how data will be collected and managed over the course of the project and whether and how data will be deposited and shared. The third pillar of the policy is the data deposit requirement, which will require researchers to deposit into a repository all data, metadata, and code that directly support research conclusions in research publications. Although not an open data policy, the agencies "expect researchers to provide appropriate access to the data where ethical, cultural, legal and commercial requirements allow, and in accordance with the FAIR principles and standards of their disciplines" (*Tri-Agency Research Data Management Policy*, 2021). The forthcoming implementation of the second two requirements are expected to promote a cultural shift with increased attention paid to research excellence in relation to RDM practices and with more Canadian research data sets being shared, cited, and reused.

The current OA-supporting ecosystem in Canada is complex, emerging as an interconnected network of infrastructure platforms, technical tools and services, and supports available from a variety of stakeholders at varying levels (institutional, regional, national, and international). Figure 2 provides a simplified overview of this ecosystem, centered around open publishing, Open Educational Resources (OER), and open data, as examples. Advocacy and governance for Open Access are supported by stakeholder organizations, such as the Canadian Association of Research Libraries (CARL),[7] Canadian Research Knowledge Network (CRKN),[8] the Digital Research Alliance of Canada (the Alliance),[9] and academic institutions and their libraries. Technical

7.
The Canadian Association of Research Libraries (CARL): https://www.carl-abrc.ca/
8.
Canadian Research Knowledge Network (CRKN) is a national organization with institutional membership with federal funding. CRKN negotiates important agreements and partnerships that support open access infrastructure and open publishing. Additionally, CRKN and the Alliance provide governance and oversight for PIDs through the ORCID-CA governing committee and DataCite Canada. For more information, see: https://www.crkn-rcdr.ca/
9.

enablers support the entire ecosystem and provide integration and interoperability between systems and platforms, including persistent identifiers (PIDs), such as digital object identifiers (DOIs) for articles and datasets, as well as ORCiDs for researchers,[10] open licenses (e.g., Creative Commons, Open Government Licences), and open metadata standards and protocols (e.g., OAI-PMH[11]). The Digital Research Alliance of Canada and CRKN support two national PID consortia, ORCID-CA and DataCite Canada, and are collectively attempting to develop a national PID strategy that would support the interoperability of the infrastructure of the OA ecosystem.[12] Examples of national open publishing initiatives include the Public Knowledge Project (PKP),[13] which develops open platforms such as Open Journal Systems (OJS), Open Monograph Press (OMP), and Open Preprint Systems (OPS) that can be hosted by institutional or regional service providers (e.g., Scholars Portal[14]). Érudit is a Canadian not-for-profit consortium of OA publishers, librarians, and academics that use open digital infrastructure for sustainable scholarly journal publishing.[15] PKP and Érudit, in partnership with CRKN, jointly operate Coalition Publica, a national, federally funded OA program that provides support for Canadian journals seeking to publish OA, which includes a dedicated Partnership for Open Access publishing model to assist in sustaining Canadian scholarly publishing.[16] Academic institutions and their libraries offer support for open publishing by hosting institutional repositories (IRs) for OA copies of scholarly output, including preprints and postprints, and by supporting open journals and monographs.[17] Several regional initiatives are offering platforms to support the creation and hosting of Open Educational Resources, including BCcampus,[18] eCampusOntario,[19] and OpenEd Manitoba.[20] Open data deposit and discovery is supported by

Digital Research Alliance of Canada: https://alliancecan.ca/

10.

An ORCiD is an Open Researcher and Contributor ID which is a non-proprietary alphanumeric code that serves to uniquely identify authors and contributors of open scholarly communication. Authors, contributors, and their bibliographic outputs can be searched through the services available on ORCiD's website: https://orchid.org/

11.

The Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH) is an open standard for repository interoperability: https://www.openarchives.org/

12.

See "Developing a Canadian PID Strategy: Results and Next Steps": https://www.crkn-rcdr.ca/en/developing-canadian-pid-strategy-results-and-next-steps

13.

The Public Knowledge Project (PKP) is funded by Simon Fraser University with membership contributions from various international and national organizations and strategic partnerships. For more information, see https://pkp.sfu.ca/about/sustainability/funders/

14.

Scholars Portal, the service arm of the Ontario Council of University Libraries, offers hosting services for OJS and OMP to its member libraries: https://scholarsportal.info/

15.

Érudit: https://apropos.erudit.org/

16.

Coalition Publica: https://www.coalition-publi.ca

17.

For more information about Canadian independent journal publishing see "What Are the Characteristics of Canadian Independent, Scholarly Journals? Results from a Website Analysis" (Lange & Severson, 2021).

18.

BCcampus: https://bccampus.ca/

19.

eCampusOntario: https://www.ecampusontario.ca/

20.

OpenED Manitoba: https://openedmb.ca/

federal, regional, and institutional funding, resulting in two national research data repositories (FRDR and Borealis), and a national research data discovery tool (Lunaris), alongside disciplinary repositories, knowledge bases, and government data portals.[21]
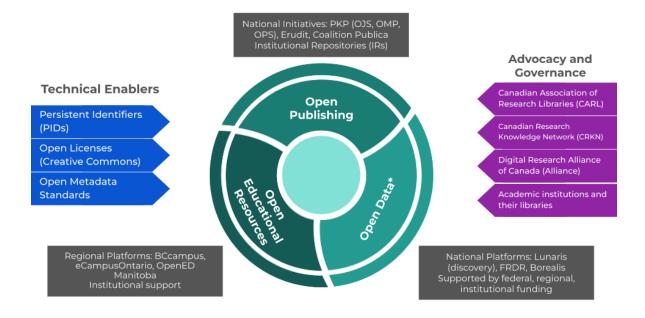


*Figure 2: Overview of the OA ecosystem in Canada. Asterisk indicates open research data (as open as possible, as closed as necessary).*

Operating at institutional, regional and national levels, the OA ecosystem that is beginning to coalesce enables the discovery of various types of scholarly outputs and promotes research innovation and equitable access to educational resources. Several other pieces are beginning to come into view, including developing and integrating tools to support the entire lifecycle of the research project, from open protocols (publishing research methodologies in public registries prior to data collection), open notebooks (capturing workflows and documentation throughout the research process with electronic lab notebooks), and open peer review (publishing peer reviewers' reports, and potentially their identities, as part of academic discourse) (Lisée & Robert, 2023). Several gaps do exist in relation to policy, workflows, and infrastructure to support areas, such as sensitive data deposit, restricted sharing, and preservation, particularly in contexts with human participant data, research involving Indigenous communities (e.g., First Nations, Inuit and Métis) and Indigenous Data Sovereignty, and IP considerations (Rod & Thompson, 2023;

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21.
    The Alliance provides the Federated Research Data Repository (FRDR) (https://www.frdr-dfdr.ca/repo/) and Lunaris (https://www.lunaris.ca/). Borealis, the Canadian Dataverse Repository, is a shared service provided in partnership with Canadian regional academic library consortia, institutions, research organizations, and the Digital Research Alliance of Canada, with technical infrastructure hosted by Scholars Portal and the University of Toronto Libraries: https://borealisdata.ca. For more information about research data sharing and reuse in Canada, see Goodchild et al. (2023).

Goodchild et al., 2023). Against this backdrop, careful consideration is needed in relation to how for-profit publishers should interact with this ecosystem and how advocacy from stakeholders can transform the OA ecosystem even further.

## What does an open future look like

In 2022, the Budapest Open Access Initiative marked their 20th anniversary by releasing a new set of recommendations that should drive the open movement in the future, namely that "OA is not an end in itself, but a means to other ends, above all, to the equity, quality, usability, and sustainability of research" (Babini, Dominique et al., 2022). To do this, they propose four high-level recommendations:

- to host OA research on open infrastructure;
- to reform research assessments and rewards to improve incentives;
- to favour inclusive publishing and distribution that never exclude authors on economic grounds, and;
- To align money spent to publish with OA goals and principles (Babini, Dominique et al., 2022).

The following synopsis uses these high-level recommendations as a framework for how we imagine and achieve an open future in Canada, and they should be read in alignment with the 10-year plan articulated in the 20th Anniversary Recommendations.

*The government should prioritize openness by modernizing copyright law and investing in open infrastructure to accompany funder mandates and compliance activities*

One action that the Canadian government should take to both enable faculty to publish OA and improve compliance with funder OA policies is to amend the Canadian *Copyright Act* by adopting secondary publishing rights, in order to "ensure that authors can immediately 'republish publicly funded research after its first publication in an open access repository or elsewhere,' even in cases where this is forbidden by publishers" (Selman & Swartz, 2023). Secondary rights have been adopted in countries across Europe, but Canada could be the first country in the world to adopt an immediate secondary right that does not allow a publisher to have exclusive rights to a work for any period of time. This would enable scholarly authors to comply with the revised Tri-Agency OA policy and avoid engaging in negotiations with publishers and/or comply with publishers' opaque and complicated Open Access policies, as their rights would be clearly articulated in law.

Recent research findings indicate that mandates and policies of research funding agencies have enormous impact on the rates of open access to research outputs; however, Canada lags behind other countries with some of the lowest rates of compliance (Larivière & Sugimoto, 2018). To improve the effectiveness of the OA and RDM policies, the government should invest in compliance monitoring practices and mechanisms to enforce policy requirements, such as open tracking of OA usage. Increased funding for open infrastructure should also be provided to make it easier for researchers to publish research outputs openly, thereby targeting both the carrot and the stick. Of particular note is the importance of recognizing existing open infrastructure initiatives, such as Coalition Publica or the national PID program, and funding them as long-term investments, rather than as short-term project funding. As another example, the government should continue to fund and expand funding programs for for non-profit, scholar-led OA through programs like SSHRC's Aid to Scholarly Journals

(ASJ)[22] and the OA grants available for both full books and chapters through the Scholarly Book Awards (ASPP).[23] The government should also provide support to address the gaps in the infrastructure ecosystem to promote openness throughout the research lifecycle. Examples could include developing an Open Access peer review publishing venue (e.g., Horizon 2020 and Horizon Europe's Open Research Europe (ORE))[24], Open Access preprints (e.g., OpenAIRE's Episciences)[25], and investing in infrastructure that promotes best practices in research data management, including secure management for sensitive data.[26]

*Universities and research libraries should continue to support and advocate for open infrastructure and promote alternative methods for research evaluation*

Universities and research libraries must invest in publishing supports, infrastructure, and the development and implementation of Open Access policies.[27] They should also explore existing publishing grants and financial supports for open publishing initiatives like Érudit, PKP, Coilition Publica, and the Partnership in Support of Open Access. Transformative agreements and OA funds that pay APCs should also be considered, but universities and research libraries must recognize that these types of supports are designed to facilitate a shift towards Open Access and may not be sustainable in the long term.

Another key element for universities and research libraries is investing in and advocating for interoperable and interconnected national infrastructures built on open platforms. There has been significant progress towards the creation of a national institutional repository service,[28] which is a more sustainable model than the numerous individual institutional IRs that duplicate efforts and are often siloed.  A fully realized national repository would serve as a shared corpus of Canadian scholarly publications and research outputs across all universities, enabling cross university discovery and collaboration. Universities and research libraries should also consider open alternatives to tools that support open research discovery (e.g., OpenAlex to replace Scopus and Web of Science (Jack, 2023)), and increase investment to support open science tools throughout the research

22.

Recent updates to SSHRC's Aid to Scholarly Journals (ASJ) to support the OA Policy: https://www.sshrc-crsh.gc.ca/news_room-salle_de_presse/latest_news-nouvelles_recentes/2023/asj_update-ars_mise_a_jour-eng.aspx

23.

he ASPP program will be expanded to include 108 Open Access supplemental grants (54 for chapters, 54 for books) by 2025: https://www.federationhss.ca/en/programs-policy/scholarly-book-awards#about-the-awards

24.

Open Research Europe: https://open-research-europe.ec.europa.eu/

25.

Episciences from OpenAire: https://catalogue.openaire.eu/service/openaire.episciences/overview

26.

See, for example, the data infrastructure provided by the National Institutes of Health in the US: https://datascience.nih.gov/data-infrastructure

27.

More information about the different methods of rights retention, including OA policies, is available here: https://bit.ly/MethodsRightsRetention. CARL has also published an Institutional OA Policy Template Toolkit for Canadian institutions: https://www.carl-abrc.ca/oa-policy-template-and-toolkit/

28.

The Canadian Association of Research Libraries, the Ontario Council of University Libraries, and University of Toronto signed an MOU announcing the development of a national repository service on 22 November 2023 https://ocul.on.ca/carl-ocul-utl-repository-mou-announcement

lifecycle (e.g., WholeTale[29] for reproducible computational workflows and OSF[30] for preregistration of research protocols).

To fully ensure sustainability in OA, universities and research libraries will also have to carefully examine how they evaluate research, placing less focus on traditional journal prestige and metrics, like Journal Impact Factor, and more on the quality of the research, including other essential aspects of research outputs such as datasets, code, and software. Universities across Canada should adopt and implement the recommendations of the San Francisco Declaration of Research Assessment (DORA),[31] and focus more on the value and impact of research assessments, rather than "publication metrics or the identity of the journal where they were published" (*San Francisco Declaration on Research Assessment*, 2013). This would ensure that researchers can take advantage of alternative publishing venues, like the national repository, subject repositories, and other open platforms that may not be tied as closely to traditional publication metrics.

### Researchers should reject commercial publishers and embrace the benefits of open publishing

Finally, researchers can and should work towards a future in which research dissemination is both open and equitable.

Commercial publishers exploit academic labour. They extract profit from every aspect of the scholarly publishing process, from the subscription the library pays for access to the APC a researcher pays to get published, to the vast surveillance economy that is now built into the commercial publishing process (Pooley, 2022, p. 42). And yet, we trust them to be responsible stewards of our research outputs, our publications, and our research data.

Researchers have choices as they have the opportunity to work within and build upon the emerging OA ecosystem to reinforce open pathways. They can work towards open publishing responsibly by favouring institutional and subject repositories as well as no-APC journals, like those hosted by university libraries, over publishing through traditional commercial publishers. They can publish their preprints in advance of submitting to journals, ensuring that their research is openly available as quickly as is possible and is subject to open peer review.[32] They can also embed openness into the entire research process, promoting open science workflows, releasing data openly through research library supported platforms, serving as reviewers and editors for non-profit scholar-led open access journals, and using OER and other materials instead of commercial textbooks in their teaching. They can also take action to reject the commercialization of research generally, following the

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29.

Whole Tale is a platform funded by the National Institutes of Health (NIH) that supports sharing fully executable objects that include the data and computational details (scripts, workflows, and environment) See: https://wholetale.org/

30.

Center for Open Science Preregistration information: https://www.cos.io/initiatives/prereg Templates of OSF Registration forms: https://osf.io/zab38/wiki/home/

31.

Declaration on Research Assessment (DORA): https://sfdora.org/jour

32.

Researchers can find preprint repositories using the Directory of Open Access Preprint Repositories https://doapr.coar-repositories.org/

example set by 40 leading scientists in 2023 who resigned from the editorial board of a top science journal (*Neuroimage*) in protest of the APCs Elsevier charges to make articles Open Access (Fazackerley, 2023).

## Conclusion

In conclusion, it is easy to understand Poynder's discouragement with the current state of Open Access, but now is not the time to give up hope. As researchers, and the libraries that support them, continue to move away from paywalls and subscription access to published research, towards open everything, including journals, books, data, educational resources and more, it is abundantly clear that OA is entrenched as an essential element of research. It is now our combined responsibility to ensure that the future of OA is responsible, transparent, and driven by the needs of most important stakeholders in the process: researchers themselves.

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## How to Cite

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# Envisioning Public Policy and Practices for Experiential Learning in Post-Secondary Education

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## Executive Summary

Experiential learning (EL), as it exists today, combines traditional and emerging approaches.  Synthesized findings from literature reviews on EL show the most widely used theory of EL is the four-stage cycle developed by David Kolb that includes Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation. Some governments have provided policy definitions of EL and released frameworks or guiding principles against which universities and colleges are encouraged to count and report on EL offerings. These definitions are often focused on the development of 'employability' skills rather than adhering to EL theory  that puts greater emphasis on developing critical thinking and reflection skills.

Globally, there are calls to transform education to develop thinkers and leaders that can address contemporary "wicked" problems. In a complex and uncertain future, the employable skills of today may not be relevant in the future. Today's learners need foundational skills such as creativity, critical thinking and adaptability to respond to changing forms of work and the many complex and interconnected global challenges facing the population .

'Design thinking' is a human-focused problem-solving approach that can be applied as a pedagogical framework for EL. Case examples of EL that employ design thinking illustrate how these approaches consolidate learning while leveraging student creativity to solve local and global challenges. New frameworks and an ever-growing array of case examples highlight how design thinking can be infused into EL across post-secondary education disciplines.

Post-secondary education is at an inflection point. Technology and societal changes are disrupting pedagogical approaches to learning and generating knowledge, and 'elite education' is a growing target for some political groups. In addition to its core missions of generating new knowledge and developing future leaders and thinkers, post-secondary institutions need to contribute to new solutions for a sustainable and

peaceful future. We propose that EL from a design thinking approach is not only an effective pedagogical method for developing learners' skills but also pledges the considerable intellectual and creative energy of students, faculty and staff to solution-building for a better future that marks a renewed relevant and meaningful role for higher education institutions.

We begin with a brief background of EL theory and recent Canadian conceptualizations. Then, we envision a post-secondary future with experiential learning, using case examples from several countries, proposing innovations in education policy and pedagogical methods that will advance human learning to solve ´wicked´ contemporary problems. We close with recommendations for infusing design thinking in EL across disciplines. Previous policy work on EL has been plagued by different definitions and levels of understanding. We suggest that future work is needed to modernize policy definitions of EL that are aligned to research theory, and conduct evaluations of EL experiences with design thinking to inform policy recommendations.

## Experiential learning theory

The Kolb model of experiential learning (EL; see Kolb & Kolb, 2009) has its critics, and other models of EL have been proposed, but it remains the most dominant theory. Experiential Learning Theory describes four stages that form a deepening spiral of learning: Concrete Experience, Reflective Observation, Abstract Conceptualization and Active Experimentation. In this model, a learner engages fully in a new experience, then reflects on their experience from different perspectives. From this reflection, the learner creates new concepts that integrate their observations and experiences into mental models and theories, then they apply these revised theories to inform their decisions in new experiences.

Despite its dominant position in the research literature, critics of the Kolb model have identified the need for more specificity to aid educators. Recent research has explored specific aspects of the Kolb model in greater detail, specifically 'what is a concrete experience?' and 'what makes for good reflection that supports learning?'. Morris (2019) conducted a systematic review of a sample of 60 journal articles drawn from the Journal of Experiential Education and used an inductive process to capture how researchers in the field conceptualized a concrete experience. The findings argue that a concrete experience is when:

- learners, often in collaboration with others, are placed in rich contextualized learning environments that represent, in the moment, uncontrived, 'hands-on', real-world experience;
- learners assume full or collaborative responsibility for the learning process;
- learning is situated in a specific time and place (to help learners understand and appreciate that knowledge is contextualized); and
- learning involves risk and learners must accept the challenge and behave with spontaneity to new, novel situations that involves unpredictability and experimentation.

Critical reflection is an important mediator of meaningful learning. Reflection is a deliberate action that is aided by a guided process (e.g., Gibbs (1988) reflective cycle) or a facilitator (faculty member, instructor, coach, etc.). Learners need time to compare and test pre-existing abstractions and theories to present real-world experiences and then to integrate new knowledge into their models. Reflection is less prominent (and sometimes absent) in co-op learning experiences where there may not be a course instructor or preceptor who is guiding reflection towards intended learning outcomes.

Morris (2019) notes that EL activities could meet the classic requirements of EL without providing meaningful learning for students if a) a contextually-poor experience, b) with limited reflective observation, c) results in contextually indifferent conceptualizations, and d) reinforcing or repeating experimentation. This learning represents a circle, where actions are repeated and existing learning is reinforced. EL theories envision a learning spiral where experiences are increasingly complex and learners modify their theories through real-world experiences to develop higher order concepts and appreciate that knowledge is contextualized (Morris, 2019).

## Experiential learning in post-secondary education

The traditional rationale for EL in post-secondary education was to complement campus-based classroom instruction. Higher education institutions have been referred to as an ivory tower and were criticized for being too far removed from reality to render knowledge relevant. Moving from the ivory tower to a lab bench and from bench to bedside in medical studies were essential steps in extending post-secondary educational settings beyond institutional walls. The shift from lab bench to patient hospital bedside is a classic example. This student-centered approach focused on how actual situations can enhance student learning. Yet, this connection sometimes overlooked the local area, and universities were criticized for maintaining a town-gown divide because the educational processes and products did not address local social issues or relate to employability. In response, the direction of importing real-world experiences to supplement university knowledge reversed. Workplaces and community organizations became engaged partners that taught educators and students about their needs and provided EL in private sector work or community locations, categorized as work-integrated learning and community-service learning, respectively.

Some governments have stepped forward with policy guidance on EL. In Ontario, Canada, the Ministry of Colleges and Universities (called the Ministry of Applied Education and Skill Development (MAESD) at the time of release) has specified four principles of EL: 1. Post-secondary supported, workplace linked; 2. Meaningful, structured, verified; 3. Compliant with employment laws; and 4. Recognition. The goal of an EL experience from this perspective is to improve students' employability and interpersonal skills to support their transition to the workforce (MAESD, 2017).

Some colleges and universities define EL with a similar focus on employability skills. For example, the University of Waterloo, Guelph University, Mohawk College, and Mount Royal University specifically draw out work-integrated learning (WIL) as a subset of EL in their definitions. For the University of Waterloo, this distinction references a long history of cooperative learning and highlights partnerships with its employer network. In Canada, post-secondary WIL programs have the benefit of being supported by Co-operative Education and Work-Integrated Learning Canada (CEWIL) which acts as a unifying organization to ensure employers and post-secondary policies and regulations respect fair treatment of students (including financial compensation).

Other post-secondary institutions have focused more on community-service learning (CSL) forms of EL. The CSL movement in Canada picked up momentum around 2003 and, for approximately a decade, was driven by non-government organizations, specifically private foundations, that defined approaches and provided funding.

For example, the McConnell Foundation gifted Laurier, and other universities, with a one-million-dollar grant for five years to increase student service and involvement in local community organizations. Implementation at first was in select courses and occasionally infused within an academic program. Meta-analytical studies of community-service learning have found positive outcomes for student understanding of social issues, development of personal insights and cognitive development (Conway et. al., 2009; Yorio & Ye, 2012).

More recently, post-secondary institutions have broadened definitions of EL to envision outcomes for students beyond employability or community service. In closer alignment with EL theory, Simon Fraser University defines EL as *"the strategic, active engagement of students with opportunities to learn through doing, and reflection on those activities, which empowers them to apply their theoretical knowledge to practical endeavours in a multitude of settings inside and outside the classroom."* The University of Calgary released a strategic plan for EL for 2020 – 2025 with a definition of EL developed through broad campus consultations (Kaipainen et. al., 2020, p.3):

> *Experiential learning (EL) is learning-by-doing that bridges knowledge and experience through critical reflection. EL activities are intentionally designed and assessed. As such, they empower learners to enhance individual and collaborative skills such as complex problem solving, professional practice skills, and teamwork. Reflecting critically on these activities helps individuals develop higher order thinking to challenge and advance their perspectives. The EL process prepares students to take on roles as active citizens and thrive in an increasingly complex world.*

Regardless of the orientation of their definition, most post-secondary institutions now provide EL experiences for a large portion of their undergraduate student body. As an example, at Wilfrid Laurier University, between May 2022 and April 2023, 74.5% of students (undergraduate and graduate) had EL as part of the curriculum (percentage based on a total student body of 25,483) (WLU, 2023). At Laurier, curricular EL includes 11 types of experiences (e.g., community service-learning, co-op, internships, and field work). Co-curricular EL is defined as "[e]xperiences in a work/simulated-work or community setting not required for academic credit" (such as on-campus employment, on-campus volunteerism, off-campus experiences, and certificates) (WLU, 2024).

There is strong evidence of positive student learning outcomes through EL. In a 43-year systematic review of experiential learning research, Burch et. al., (2019) found students experienced superior learning outcomes, measured both quantitatively and qualitatively, in classes using experiential pedagogies as compared to traditional learning environments. The effect sizes for EL were robust across moderating variables such as the type of learning outcome measured (cognitive, social, personal insight), the type of assessment, the duration of the experience and whether feedback was provided during the experience. Studies across Canada, specifically, have also found favorable findings on the impact of EL on academic achievement, skill development, career readiness, and employability. Process program evaluations have highlighted the need to attend to specific aspects of the off-campus learning environment, such as stakeholder engagement and fair treatment (e.g., student compensation for work, regulation of conditions, etc.) but existing EL programs in Canada have been largely deemed successful. The case for EL methods is strong, but post-secondary education can do more to leverage EL for student success and positive community and global impact if it moves beyond traditional conceptualizations.

## Envisioning PSE's Future with Experiential Learning

In its 2021 report on education, UNESCO referenced the intersecting and cumulative challenges facing the global community, including the recent health pandemic, climate change and increasing political instability and violence. The Reimagining our Futures Together report called for the global education sector to unite in collective endeavours to "provide the knowledge and innovation needed to shape sustainable and peaceful futures for all" (UNESCO, 2021, p.2).

This call-to-action echoes appeals by researchers and global institutions for education that builds 21st century skills – skills and abilities that will allow learners to thrive and lead in the complex and uncertain future. Early conceptualizations of 21st century skills were organized around the four C's: critical thinking, communication, collaboration, and creativity (National Education Association, 2012; Partnership for 21st Century Learning, 2015). More recent research in the area has adopted the concept of 'global competencies'. The Council of Ministers of Education, Canada defines global competencies as an "overarching sets of attitudes, skills, and knowledge that can be interdependent, interdisciplinary, and leveraged in a variety of situations both locally and globally" ([www.cmec.ca](http://www.cmec.ca)). Global competencies is a broad term that includes critical thinking (Seibert, 2021; Wale & Bishaw, 2020), complex problem solving (Shanta & Wells, 2022), creativity and innovation (Hughes et al., 2022; Black et. al., 2021), adaptability (Dishon & Gilead, 2020; Kivunja, 2015), cultural awareness (Akkari & Radhouane, 2022), and futures literacies (Kazemier et. al., 2021; Pouru-Mikkola & Wilenius, 2021; UNESCO, 2021). The future is complex and uncertain and today's learners will need to be able to adapt and respond to a wide range of 'wicked' global challenges for a sustainable and peaceful future.

EL is a core component of an education experience that can develop the skills and abilities that will be demanded in the future of today's learners. We envision a future for post-secondary education that expands current models of EL by applying design thinking as a pedagogical method for developing global competencies. Design thinking, and its sub-disciplines (e.g., User-Experience Design), are increasingly taught in post-secondary institutions as specific courses and programs, but in its broader form, design thinking in an approach and a mindset that can be applied across sectors and disciplines. With its focus on human-centred problem solving, creativity and optimistic experimentation, design thinking is an interdisciplinary approach to tackling complex 'wicked' challenges that will confront today's students

There are three dominant models of design thinking (Micheli et. al.,2019). The IDEO ([www.ideo.com](http://www.ideo.com) or [www.ideo.org](http://www.ideo.org)) model describes three stages: inspiration, ideation and experimentation. The Stanford D. School ([https://dschool.stanford.edu](https://dschool.stanford.edu)) names five stages of the design thinking process: empathize, define, ideate, prototype and test. IBM describes a four-phase process ([https://www.ibm.com/design/thinking/](https://www.ibm.com/design/thinking/)): understand, explore, prototype and evaluate. Though they vary slightly in area of focus and language, all design thinking models share the same set of core concepts: to understand the contextual environment of the problem and explore solutions from the perspective of the end user or beneficiary, to be comfortable with the ambiguity and uncertainty of the creative process while exploring different options, and to use iterative experimentation for problem solving. The design thinking process, with its focus on divergent and convergent thinking, problem-solving, critical thinking, flexibility and adaptability are strongly aligned with the 21st century global competencies needed for the future (Muñoz et. al., 2023; Sheer and Plattner, 2011).

CityStudio is a case example of EL using a design thinking approach. First conceptualized by two faculty members from Simon Fraser University, CityStudio began in 2011 as a partnership between the university and the City of Vancouver, with the goal to leverage the creative energy of students to meet the city's ambition  of becoming the greenest city in the world by 2020 (https://citystudiovancouver.com/). In a semester-long experience, students, from a wide variety of academic backgrounds, work in teams to tackle challenges identified by municipal partners (www.citystudioglobal.com). Learners are confronted with a real-world, authentic problem that is relevant in their community and must apply design thinking principles effectively, as a team, to explore and test potential solutions. The CityStudio model has been adopted by several other post-secondary institutions (e.g., University of Fraser Valley-City of Abbotsford; Western University-City of London; Wilfrid Laurier University-City of Waterloo) and a global non-profit now provides guidance and support for new partnerships (e.g., Australia).

The design thinking approach can be applied to a range of fields. Integrating the focus on work common among some colleges and universities, educators can draw inspiration from the International Training Centre (ITC); the education and training arm of the International Labor Organization (ILO). In 2019, ITC-ILO hosted an event for collaborative problem-solving. Teams of students focused on designing solutions for the future of work and the future of learning in 2030. Essential elements that emerged from the Hackathon are to "embrace digital ethics and find a technological balance. . . . involve young people. . . . [and know that] empathy and foresight can advance social justice and promote decent work" (ITC, 2019). The ITC offers short courses that use various delivery modes, from the classroom to virtual reality and from an online learning platform to hands-on workshops (ITC, 2022) and use contemporary approaches, including design thinking, systems thinking and futures thinking to develop new solutions for the future of work.

The Government of Australia is a leader in the application of design thinking for public policy and education. In 2014, faculty at the James Cook University in Queensland undertook a study with the support of the Australian government to explore how design thinking pedagogies could be integrated across university disciplines. Through eight initial case studies, they found that design thinking-based EL successfully scaffolded students "ability to solve problems and approach problems from an innovative and creativity mindset" (Anderson et al., 2014). At the conclusion of their study, they determined that design thinking was an applicable and relevant pedagogical strategy across disciplines and there were creative examples of in-class and out-of-class EL activities from which other post-secondary educators could draw inspiration.

Research suggests learning through design thinking occurs in multiple forms. First, students learn about the design process, they become more reflective of the nature of problem solving and the complexity of problems (Carroll et al., 2010), and develop problem solving and creativity skills (Guaman-Quintanilla et. al., 2023). Students also learn at the intersection of design thinking and academic content relevant to the current problem. For example, students exploring how to maximize use of public spaces may investigate theories of urban design or psycho-social theories of social cohesion; or students exploring alternatives to single-use plastic containers may consult research in materials science, behavioural insights or environmental science. Finally, students learn through connection and collaboration with others. The design thinking process is rooted in approaching problems from the user or future beneficiaries' perspective and almost all human issues require problem solvers to confront issues of equity, diversity, privilege and power. Through design thinking, students gain a greater understanding of social issues, consider and reflect on their place in society and build empathy for others. They also learn to work effectively in interdisciplinary teams through strong communication skills, collaboration and

respect for different perspectives. In combination, design thinking-based EL experiences help prepare students for their role as leaders and problem-solvers in a complex and uncertain future.

## Recommendations for Experiential Learning through Design Thinking

We recommend three first steps for modernizing EL in post-secondary education.

1. Governments and institutions should update definitions of EL to be more aligned with academic theory.

The theory of EL describes a deepening learning cycle where learners use new experiences to develop, conceptualize and experiment with theories of the world. Through experience, students learn that knowledge is contextualized and develop critical thinking and adaptation skills. Not all current policy definitions of EL adequately describe this form of learning and some are reduced to descriptions of 'when' and 'where' learned occurs, over 'how' or 'why'. It is possible to offer a EL experience that does not contribute to higher order learning (Morris, 2020). Strengthening definitions would improve the quality of EL for students and inform government policy work in the area.

2. Post-secondary institutions should explore design thinking, not just as subjects in themselves, but as pedagogical approaches across disciplines as part of EL.

There is growing array of case studies and empirical research showing that design thinking as a pedagogical approach to EL is relevant across a wide range of post-secondary disciplines. Centres of teaching and learning can collaborate with design thinking faculty and educators already applying EL approaches to explore options that align with the strengths and needs of each institution. Governments can encourage this work as progress toward developing global competencies in today's learners to support future social and economic prosperity. Government work to capture and share case studies of design thinking integrated EL would be useful to facilitate the expansion of the practice.

3. Conduct additional research on EL and EL with design thinking across all stakeholders

Additional research is needed to assess the policy context, barriers, facilitators, and implications for promoting and sustaining EL and EL with design thinking at the level of courses, programs and academic institutions, including its impact on funding structures and partners. There is also a need for high-quality systematic research by type of EL and its costs and impacts on all actors. Most research on EL focuses on student outcomes but there are also impacts, costs and benefits to instructors, institutions, partner organizations and the wider community. Broadening the scope of EL outcomes research will advance understanding and policy making in this area.

## Summary

In *The Avalanche is Coming: Higher Education and the Revolution Ahead*, Barber et. al. (2013) argue the concept of the traditional university is under pressure. They note that the economic challenges of education, the accelerating digital disruption and entrance of digital natives to the student ranks are requiring post-secondary institutions to rethink their models of education. In a future when digital content is ubiquitous and

digital natives are imaginative, collaborative and confident curators of content, the post-secondary model of transferring knowledge from faculty to students is no longer relevant. Institutions need to educate in a way that integrates theory and practice and where students are able to create value out of these experiences (Barber et. al., 2013; Lor, 2017).

There is a global call for the education sector to unite in collective endeavours to "provide the knowledge and innovation needed to shape sustainable and peaceful futures for all" (UNESCO, 2021, p.2). Developing employability skills focused on today's needs may not be relevant for future work. Learners need to develop a set of foundational global competencies to prepare for the future. Creativity, innovation, collaboration, complex problem solving, adaptability and cultural awareness are broad skills that transverse across disciplines. EL that applies a design thinking pedagogical approach challenges learners with authentic and relevant challenges that require creative confidence, empathy and iterative problem solving. These are the skills our learners need. The future is complex and uncertain and today's learners will need to be able to adapt and respond to a wide range of 'wicked' global challenges. The peace, sustainability and prosperity of our future depends on it

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# Building Better Health Sciences Education

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## Introduction

Universities and colleges have a social purpose beyond education, research, and knowledge mobilization. The discoveries we make and share through post-secondary institutions should be put into practice—to make the world healthier, safer, and more just. Sadly, that doesn't always happen. Moving from knowledge to action is easier said than done. This chapter provides one exemplar from Queen's Health Sciences about how we're trying to break the impasse. Our intentions are to act on what we know. The motivation to do better is palpable. Work in health sciences education is in big demand. Canada is facing a health human resources crisis the likes of which we've rarely known in this country. To cite one snapshot, a report from Ontario's Financial Accountability Office, regarding additions and departures in the workforce, makes a prediction that by 2027, Ontario will be short 33,000 nurses and personal support workers (Financial Accountability Office of Ontario, 2023). Educating the health workforce of the future is core business for faculty at Queen's and elsewhere. We want to innovate our practices, to do things differently and better, based on what society needs now.

We're purposefully re-inventing the future of post-secondary education to become a force that responds to social need and adapts our methodologies in a practice of continuous quality improvement. We haven't fundamentally changed the model of medical education since the Flexner Report was published in 1910. And nursing school still resembles the model established by Florence Nightingale 160 years ago. Health care has changed a lot during that time. More care happens in communities (not just hospitals) and we're gradually moving away from hierarchies to team-based care. The approach to education ought to reflect those differences.

Our creative work is also driven by the state of health care after enduring a pandemic that broke open all the longstanding cracks in our delicate and imperfect health systems. What Canadians have learned—although we should have understood it all along—is that our health systems are only as strong as the people who make them work.

Universities and colleges have a mammoth task ahead as we help rebuild the health workforce. While we

could fill these pages with statistics about the number of doctors, nurses, and other health workers who have left their jobs and need to be replaced, it is the personal stories that are the most heart wrenching. On the one hand, I hear from health professionals themselves. For example, there are family doctors who want to retire, but they are worried about leaving their patients behind. I receive messages like this:

> *I have been in practice since 1983; six of the eight who are currently practicing in our group will be retiring at the same time at the end of May. It will orphan another 7000 or more patients in our area because, like most other family practices who have been recruiting to replace retiring physicians, we have had no luck* (confidential personal communication, n.d.).

On the other hand, I hear even more from individual people telling me they have nowhere to go for primary care, wondering if I know someone who will take care of them. These health workforce shortages are at the root of ever-growing backlogs for surgical procedures; the new phenomenon of emergency room closures across the country; rising costs to health systems; and of course, a huge human toll among those who don't have timely access to care. The post-secondary sector can't continue with business-as-usual.

It was Winston Churchill who said you must never let a good crisis go to waste. He said that during the darkest days of World War II when he and others could have succumbed to despair, but instead they chose to forge new relationships and create better structures for the future. These are dark days for health care in Canada—and around the world. We must use this crisis for good. And where better to start that work than at the very places that create human resources for health? Across the country, the places where nurses, public health scientists, community health workers, and others are educated and trained, are places where many solutions can be found.

Although it is a mammoth task, universities and colleges have a critical role to help rebuild the workforce. I'm convinced the post-secondary sector has not only an opportunity, but a responsibility, to drive innovation in response to this social need. We are the institutions who can do the analysis to determine what the health workforce of the future should look like. We can adapt, make curricular changes, and engage communities to build a better workforce and thereby more effective health systems. The incentives for us to offer solutions have never been greater. With about half of most provincial budgets spent on health, we should be allies with policy makers who need us to create some of the solutions that will make health systems sustainable and provide a high-quality stream of workers for the future.

What will it take to achieve change? And what should that change look like?

I offer here an overview of four initiatives we're undertaking at Queen's University to modify our educational programs in response to social needs: one program is for training family doctors; one for training Indigenous youth in the health professions; one for improving access to primary care; and one initiative to improve how we train students to work in interdisciplinary teams. I hope these initiatives will spark engagement and ideas in contexts beyond Queen's, allowing for wide-spread efforts to connect health sciences education with societal needs.

## Major modification in medical school

The first innovation is about access to family doctors or primary care. Permit me to set the stage for why this matters and show that it's not just my bias because I am a family doctor.

There is a large international body of scientific evidence—going back decades—demonstrating that countries with strong systems of primary care have the best health outcomes, the most affordable costs, and they offer care in a way that is both equitable and accessible (Starfield et al., 2005). I'm disappointed to say that Canada is not one of those countries. We do not have strong, coordinated, universal systems of primary care. Some provinces do better than others, but none have fully figured it out. For example, look no further than the current crisis in access to family doctors or primary care teams. A recent national survey, called OurCare (n.d.), estimates about 22 per cent of Canadian adults do not have access to a family doctor,   and/or a primary care nurse practitioner. That's close to seven million people who can't access the front door to the health system.

Sadly, it's getting worse. Across the country only 30% of medical students select family medicine as their first choice for specialty training (Canadian Resident Matching Service, 2023). And of those who finish their residency in family medicine in Ontario, as few as 15% are choosing to set up or join a community practice (HealthForceOntario, 2021). Of course, reasons for this shortage are multifactorial, but some of it is on us. It is essential that we evaluate the way we train, our processes for recruitment and selection, and the hidden curricula that persist in our medical training programs.

Universities are in the prime position to modify its programs in response to societal need. In this case, Queen's University developed a plan to focus a portion of our medical school directly on the meeting the challenge of growing the family doctor workforce. We are a partner of Lakeridge Health, a hospital system in Durham region (east of Toronto). We have assigned 20 medical school seats to a new approach to medical education—intentionally selecting and training students for a career in comprehensive family medicine. It is heavily community-based and, most importantly, it is a seamless program of six years combining both medical school and direct access to family medicine residency, bypassing the traditional resident matching system. We specifically selected students with a demonstrable commitment to generalism, and it will be on us to make sure they have comprehensive competencies and confidence when they are finished—not to mention that they graduate with enthusiasm about being family doctors. We met an ambitious timeline and the launched the program at Lakeridge Health in September 2023.

Some of the academic innovations in this initiative are the efforts to:

- Modify admissions processes to select a phenotype of students based on social needs
- Modify programs in response to contemporary needs
- Embed students from the start of the program in the communities where they are needed after graduation
- Consult communities in program goals and curriculum development
- Recruit community preceptors to welcome faculty with experience in family medicine

- Shorten programs or blend stages of training to move graduates into the workplace faster
- Move academic mountains to put modified programs in place quickly

## Take the university to the community

A second innovation is our expanding partnership with the Weeneebayko Area Health Authority. This work is inspired by more than simply the clinical and social needs of the community. It is a response to the Calls to Action of the Truth and Reconciliation Commission. Call to Action 23 is an appeal to increase the number of Indigenous professionals working in the health care field and to retain those Indigenous health professionals in their communities (Truth and Reconciliation Commission of Canada, 2015).

Queen's University has a six-decades-long relationship with the general hospital in Moose Factory as well as all the First Nations communities along the western side of James Bay such as Attawapiskat, Kashechewan, and Fort Albany. Since 1965, we've been sending doctors to work in that hospital, and they've been referring patients to Kingston for tertiary care.

Building on that long-standing clinical relationship, we are expanding it to add an educational partnership. We co-developed a plan to deliver university health professions education in Moosonee for youth living in those communities. We secured a large gift from the Mastercard Foundation to support this partnership, and we hope that both the federal and provincial governments will be key partners as well.

We are already working with local schools, school boards and high school students in the region to make sure students have the necessary prerequisites to enter a university health sciences program. It is our goal that, beginning in 2025, we will be delivering an Indigenous-informed curriculum for nursing, health sciences, and eventually medical school, physiotherapy, occupational therapy and more. We're already seeing how Indigenous ways of knowing and doing will lead to dramatic changes in the way we teach and learn—including advice to amend our academic calendar to fit into the four-season patterns of how Indigenous students learn on the land.

Some of the academic lessons in this initiative are:

- Don't wait for students to come to you
- Take programs to the community, especially to isolated communities
- Build upon existing authentic partnerships
- Build community advisory bodies to provide input for curriculum, knowing that it will have a positive impact well beyond that program

## The university as the convenor of partnerships

The third project is an example of how the university can be part of the solution on access to health care—and help meet our own program expansion needs along the way. I've already referred to the significant shortage of family doctors. This has an impact on the health sector, but also has an impact on the entire economy of our communities and country. Canada needs to develop better models so that everyone has access to a primary care home.

Some would say it's not really the university's problem to ensure access to health care. They might say we should let health system partners figure things out while academic institutions stand back and focus on either research, or on the education of students.

But universities are innovators. That includes being innovators in health systems. We can also be great convenors. That is the power we employed for this third project, in which we brought together nine local partners who have an interest or role in health care delivery—three local hospitals, the city, the public health unit, physician groups and all the schools in our faculty (nursing, medicine, and rehabilitation)—to design a modified model of primary care delivery.

Our model is an adaptation on the concept of the patient-centric medical home that has been promoted in the United States for decades. Access to primary care should be like access to public schools. It should be universally available and offered in every geographic region.

We cannot imagine a society that would find it acceptable for more than 20 per cent of children not to have access to a public school. So, why is it acceptable that millions of people don't have a primary care home? We believe everyone who lives in Canada should have access to a team of health care providers, including family doctors, that becomes your first point of contact for continuous, comprehensive, coordinated, person-centric care.

Members of our faculty have helped develop a model for geographically-determined access to team-based care. The first phase will be a primary care home for 10,000 people in our region who don't currently have access to care. We're calling it the Periwinkle Model. The name Periwinkle was inspired by the beautiful five-petaled flower. The five petals are intended to represent the Quintuple Aim for Health Care Improvement—a healthy population, better care, happy providers, good value for money, and fairness or equity (Nundy et al., 2022).

One of the unique features of our model of primary care delivery is that, like everyone else on the team, family doctors will be on a salary, pro-rated according to the number of shifts per week and weeks per year that they want to work. This allows them to have holidays, which many family doctors currently don't have because they're tied to a roster of patients and can't find temporary locum coverage. It allows new graduates and more experienced doctors to have much more control of their work/life balance. In fact, we're seeing recently retired doctors offering to come back into the system if they have the ability to commit to only working a couple of shifts per week.

Most appealing for clinicians (and patients) in this model of primary care is that they can work with

a team. Patients are seen by the most appropriate care provider—whether that is a family doctor, nurse practitioner, registered nurse, physician assistant, physiotherapist, occupational therapist, dietician, social worker, or another professional. Clinicians can outsource some of their administrative burden to team members who are best skilled to complete forms, make phone calls, and navigate the system on behalf of patients.

## Radical collaboration in education

This brings me to the fourth initiative we're working on—perhaps the hardest one, and the one that is still in development. But we're trying to figure it out.

This is an initiative in keeping with the motto that emerged out of our faculty's strategic plan developed a couple of years ago: "Radical Collaboration". This initiative is to ensure 20 per cent of all our educational programs are delivered in an interdisciplinary setting. We don't mean simply an interprofessional education lecture or module. We mean taking entire courses with students from another discipline. It would mean, for example, physical therapy students and medical doctor students taking their entire anatomy course together—or nurse practitioners and occupational therapists taking their entire communication skills course together, or shared courses in professionalism, in ethics... you name it.

The part of this interdisciplinary initiative that we are most excited about is the idea of team-based placements. We've experimented with this, it works, and the students not only benefitted tremendously, but they also loved it. For example, in the early stages of the pandemic, soon after vaccines were approved for use in Canada, Queen's University was invited to participate in Operation Remote Immunity. The purpose of this project was to deliver and administer vaccines to remote communities in northern Ontario. Nursing students, medical students, residents, and faculty members from three universities were asked to help. We selected teams of learners: some from nursing, medicine, and family medicine residents. The teams went on two-week trips, staying at bases in northern Ontario and each day, flying into isolated communities. Together, they administered vaccines to residents living there.

When Operation Remote Immunity concluded, we brought the teams together to debrief. We wanted to find out what the students had learned and how it would impact them in the future. I expected these students to tell us they had learned so much about cultural safety and traditional Indigenous knowledge—which they did. But what was more striking to them was the chance to work on interprofessional teams. A medical student told us she hadn't had such a positive experience of working on an interdisciplinary team like this before. She beamed when she talked about how working alongside paramedics, nurses, residents, and faculty members meant sharing stories, learning about each other's roles, and understanding how they could best support each other. Her biggest takeaway was the new understanding and appreciation she had for her future colleagues. Our takeaway was that we must create opportunities like this on a regular basis.

Some of you who are not in health sciences faculties will assume we do interprofessional training already, but we do very little. The health professional programs currently run on very separate tracks, rarely meeting in an intentional way. And yet, we hope our students will graduate and know how to work in teams, and that they will understand each other's roles and respect each other's contributions.

If students don't learn about related professionals, and how to work effectively and positively with them during school, it can be hard to learn later. For example, it can be hard to ask questions when it seems like the answer should be known. I remember a final-year medical student nervously asking me: What is an occupational therapist anyway? It should be our goal that no one graduates without a good understanding and respect for other members of the health care team—for the sake of better patient care.

This is the dream we've been working on, alongside communities who want to help. We want to build placements in interdisciplinary cohorts—perhaps they could even share accommodations in a housing unit provided by the community. They would do their orientation together, share cases together, debrief together about what they are learning. They can be specifically trained around task shifting. They might ask themselves: *Is there anything I'm doing in my workday that could be done by someone else in the health team? Am I working to the full scope of my training?*

Innovating to create high quality interprofessional training opportunities is far more complicated than it should be, and gets into issues like scheduling, timetabling, accreditation standards, union rules, and so much more. Even harder than those operational challenges are the culture changes required. It's surprising to see how reluctant overburdened health workers can be to give up some of their work to another member of the team. But the days of turf-battles should be behind us. There's more than enough work to go around, and we need to work together to get it done.

The key to the future sustainability of health care is all about teams. We can't fix all the issues facing healthcare on our own, but universities and colleges *can* make significant changes through better training for future health care team members.

It's a fascinating time to be in the business of preparing the health scientists and health professionals of the future and finding ways to do our work faster, smarter, better. It's been a long time since there was significant innovation in the basic ways that we train doctors, nurses, and others. As a result, government leaders and policy makers may underestimate our ability to be nimble and creative. We shouldn't wait to be asked. Many educational scholars have evidence and ideas about how to build a better health professional. We should go ahead and show how it's done. The country and our local communities are counting on us.

As academics, we are limited in the levers we can access if we want to see changes in public policy and practices. But we are not impotent. The post-secondary sector must step up and offer hope to the public that things will get better. The good news is that we are in the business of producing the resource that health systems need the most. We are in the people business—the business of developing human resources for health. If we learned anything about health care through the pandemic, we learned that our hospitals and health systems are nothing without the people behind them.

Academics are also in position to *assess* for efficacy and adapt accordingly. Not only can we make informed decisions about innovations to training, but we can assess whether they are working as intended and plot a course for next steps. This puts us in a position for rapid, evidence-informed program development.

We can innovate how to train health workers so that they are fit for purpose and fit for serving in the areas of greatest need. We can take our educational programs to the communities that need them the most and have the

least access. We can partner with other community agencies to demonstrate new models of care delivery and place our students in those demonstration sites to expand the workforce and given them exceptional placement experiences. We can assess for efficacy and rapidly identify new opportunities. And we can train our students to be the best possible teammates, ready to share the tasks with others and work to the maximum scope of their competencies.

As we do this work, and show how creative and agile we are, the post-secondary sector will increasingly be seen not simply as the places where the health workforce is trained, but also the places to provide the best solutions for society's most pressing health challenges.

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