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Land Acknowledgement

Humber College is located within the traditional and treaty lands of the Mississaugas of the Credit. Known as Adoobiigok [A-doe-bee-goke], the “Place of the Alders” in Michi Saagiig [Mi-Chee Saw-Geeg] language, the region is uniquely situated along Humber River watershed, which historically provided an integral connection for Anishinaabe [Ah-nish-nah-bay], Haudenosaunee [Hoeden-no-shownee], and Wendat [Wine-Dot] peoples between the Ontario Lakeshore and the Lake Simcoe/ Georgian Bay regions. Now home to people of numerous nations, Adoobiigok continues to provide a vital source of interconnection for all.





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Foreword

Dr. Ginger Grant

Dean, Office of Research & Innovation

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The COVID-19 pandemic devastated millions of lives and disrupted the world of work. This business disruption also presents an opportunity for innovation to transform and improve organizations, leaders, employees, and stakeholders.


To address a complex environment and global talent shortage, it is crucial that organizations “revision” the way we lead, work, adapt to change, and collaborate creatively in ways that leverage and grow available talent, moving from innovation control to a more dynamic, design-driven innovation delivery. In this new world of work, characterized by new ways of organizing and working, Canada’s Polytechnics are well positioned to answer the call.

Ultimately, the pandemic may serve as a catalyst for revising legacy beliefs, structures, and behaviours in business. We need to revision the way we work. This issue of JIPE speaks to a variety of topics that provide food for thought.

Enjoy the buffet.

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The Intersection of Curiosity, Research, and Innovation

Dr. Melanie Spence-Ariemma,

Vice-Provost and Chief Academic Officer of Guelph-Humber

The creation of places to learn is fundamental to evolution. This cannot be considered as one-dimensional. Instead, a place of learning should inspire curiosity, research, and innovation. It should nurture the minds of those who are curious and promote opportunities to explore innovations and support the systematic study of a question.


Curiosity is defined as the “desire to know”¹. Curiosity drives the desire to explore, to ask questions, to learn, to cultivate new ideas and perspectives, be open to new experiences and to find answers and solutions to problems. Research is defined as the “studious inquiry or examination; the collecting of information about a particular subject; to search or investigate exhaustively”². Research leads to finding solutions to problems, understanding relationships between things, seeing the world in a new way, developing new products and technologies, advancing fields of study, and finding new treatments. To innovate is defined as “to make changes: do something in a new way”³. Innovation encourages experimentation, promotes change, supports relevancy and currency, and inspires the growth, evolution, and implementation of new ideas.

The Journal of Innovation in Polytechnic Education is a publication to promote curiosity, explore innovation, and support research. The articles in this issue highlight the richness and diversity of topics, support learning in multiple fields of study while expanding upon and building

new knowledge in specific disciplines of study. Topics include how polytechnic institutions are leading the way through sustainability, how to improve academic integrity through consistent training for invigilators, how to rebuild a sustainable future for chefs and how to protect academic integrity through planning. These articles demonstrate the richness and diversity of ideas, thoughts, and findings that are invaluable in building upon existing bodies of work, advancing fields of study and positively impacting post-secondary education.

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- 1 Merriam-Webster. (n.d.). Curiosity. In Merriam-Webster.com dictionary. <https://www.merriam-webster.com/dictionary/curiosity>
- 2 Merriam-Webster. (n.d.). Research. In Merriam-Webster.com dictionary. <https://www.merriam-webster.com/dictionary/research>
- 3 Merriam-Webster. (n.d.). Innovate. In Merriam-Webster.com dictionary. <https://www.merriam-webster.com/dictionary/innovate>

The Next Polytechnic Challenge

Sarah Watts-Rynard

Chief Executive Officer, Polytechnics Canada

While the economy is cyclical—moving between expansion, peak, contraction and trough—the reality is that a highly skilled workforce is always in demand. At every stage of the economic cycle, employers need workers capable of flexing to accommodate the challenges of the day, whether implementing new technology, entering new markets, streamlining operations or pivoting to a new business model. Regardless of the circumstances, skills don't go out of style.

In recent years, Canada's polytechnics have reported hundreds of thousands of continuing education registrations annually. This illustrates that, while barriers to lifelong learning remain, Canadians are choosing to stay abreast of new developments in their industry or occupation, or pivoting to new careers in growing sectors.

In a recent study, we found that more than 90% of Canadian workers and employers believe skills development remains important regardless of the stage of one's career. Nearly half of the 1,500 workers we surveyed said lifelong learning has become critical for both job advancement and career change. Meanwhile, employers said supporting lifelong learning among their employees improves competitiveness, increases retention, supports economic recovery and facilitates internal job transitions.


With the job market changing so quickly, the challenge most learners and their employers point to is a lack of confidence

about what skills will be important in the years ahead and where to go to develop them. As experts in continuing education and lifelong learning, Canada's polytechnics are clearly a good place to start.

Yet, we need to consider if we are also positioned to proactively address the navigation challenge. Can we capture sector-, region- and occupation-specific labour market data and map it to the more than 17,000 short-cycle courses available across the network of polytechnics? Are polytechnics able to step into the role of trusted lifelong learning advisors?

The alternatives aren't very appealing. We could leave learners to figure it out for themselves, perhaps leading to low-cost, low-return solutions on the other end of an internet search. We could wait for someone else to develop a matching tool: a government initiative, reflecting their interest in a more efficient and productive labour market, or a business organization with training of their own to offer.

I can't help thinking that this is a skills challenge ideally suited to Canada's polytechnics. Their fundamental place at the intersection of workforce skills and workplace productivity positions them to share insights and expertise, courses and programs that respond to the growing call for lifelong learning. The polytechnic model has always attracted learners ready for the workforce and, in today's environment, that could easily extend to those ready for what comes next.

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References

Leger Marketing Inc. (2022) The Lifelong Learning Attitudes of Canadians: Research conducted for Polytechnics Canada. Retrieved from <https://polytechnicscanada.ca/priorities/skills-talent/upskilling-reskilling/> on 12 March 2023. https://mcusercontent.com/c1f5bc288e536a7018a99a429/files/32d99df7-de8e-5ba1-73ad-cb4019232a30/2022_Leger_Overview_and_Key_Messages_Newsletter.04.pdf

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Research is Art is Entrepreneurship is Innovation

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As American writer and humourist Mark Twain (whose real name was Samuel Langhorne Clemens) said, “The difference between the almost right word and the right word is really a large matter—’tis the difference between the lightning-bug and the lightning.” With this in mind, I’m intrigued with the different English-language words we use to describe the following phenomenon:

Creating or discovering something new for the world that eventually displaces what existed before and ends up generating some kind of value for both the creator and the audience who wants the new thing.


Which word would you use to describe the above process? For example, author Seth Godin says it is art. For Austrian economist Joseph Schumpeter, it was *innovation*. Business schools often call it *entrepreneurship*. All of those words resonate with me in different contexts, but it is important to note that the phenomenon is also *research*. Why does this matter? From my perspective, there are two reasons. First, each discipline (art, economics, entrepreneurship, research) can learn so much from the other because each often excels in different aspects of this phenomenon; artists often excel at generating a flow of new ideas, innovators deliver new shared value, businesses understand the needs of their audiences, and researchers displace old concepts with new discoveries. Second, the artificial silos of these differently named disciplines diminish opportunities for interdisciplinary

work and appreciation—each believing their methodologies and goals are unique.

As the value and impact of interdisciplinary applied research gains visibility and significance in our society (particularly in our colleges and polytechnics), I hope we will begin to see increased collaboration between these disciplines and grow to understand these words are synonyms: research, art, entrepreneurship, and innovation.

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Preserving and Promoting Academic Integrity in a Changing Post-secondary Landscape

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Integrity, post-secondary, pandemic, quality, strategic planning

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***Innovation Spotlights** extremely brief contributions that highlight an innovative teaching practice, approach, or tool, and provide accompanying evidence that speaks to the effectiveness of the innovation.

Abstract

Rapid and necessary changes to the delivery of education in the post-secondary setting during COVID challenged our traditional ways of thinking, being, and doing within higher education. Preserving and promoting academic integrity during these uncertain times were challenging and required a focused, thoughtful, and deliberate shared approach. One faculty within a large urban Canadian post-secondary setting set out to strategically plan efforts that would support and promote integrity within their Faculty of Health Sciences & Wellness. A framework co-created by one of the authors served to anchor the discussions and planning, ensuring initiatives that effectively reach out to students, faculty, staff, and leadership are being realized through deliberate actions that engage the different groups within our community. Examples include an extended membership with the International Centre for Academic Integrity for our leaders, a newly established Community of Practice for interested faculty and staff, and focused campaigns like the Boost and Bolster fall campaign for students, faculty, staff, and leadership. Lessons from this work could offer other higher educational organizations suggestions for similar work.

Introduction

Dramatic changes to how post-secondary education is delivered can be directly attributed to the COVID-19 pandemic. While the initial upheaval and chaos were sources of stress for all members of the learning community, the pandemic also served as a catalyst for an overall discussion about our approach to post-secondary higher education and the need to revitalize our thinking and educational efforts (Goldberg, et al. 2021; Steinberger et al., 2021). The pandemic dictated an urgent, abrupt, and immediate change to the delivery of educational programs through virtual online platforms that ran both synchronously and asynchronously. This dramatic shift did not negate the need for quality educational offerings, nor did it preclude the need for our continued educational efforts with content and processes that remained anchored in academic integrity (Reedy et al., 2021).

The merits of learning within post-secondary organizations that value and cultivate integrity include the ability to achieve high standards of excellence so

that students obtain the required knowledge, skills, and ethical components important and necessary to their future careers (Guerrero-Dib et al., 2020; Miron, 2016). While there is debate on how academic integrity is best or most effectively preserved through the online delivery of education, the benefits, importance, and need for the work of promoting learning cultures of honesty remains undeniable. This article outlines the work of the Faculty of Health Sciences & Wellness (FHSW) Academic Integrity Council (AIC) at Humber College ITAL, to promote the shared responsibility of integrity across our teaching-learning settings. Specifically, a description of the FHSW - AIC's strategic planning efforts undertaken using the Promoting Academic Integrity Framework (Figure 1), the outcomes of the strategic planning efforts, and commentary on future opportunities will be discussed.

Review

An overarching definition of academic integrity includes the notion of an unwavering commitment to values that support educational integrity like honesty, trust, fairness, respect, and responsibility (International Centre for Academic Integrity, 2021). Such commitment is expected throughout the learning experience, despite adversity and regardless of location for learning. Breaches or departures from academic integrity have been described in terms of academic misconduct and academic dishonesty. Such breaches include deliberate acts aimed at evading set expectations for evaluation and include acts of plagiarism, fraud, unauthorized sharing, test cheating, and contract cheating, to name a few. Such acts create circumstances that are unfair to other students and threaten the integrity of learning and the work done within post-secondary settings.

It is important to note that the pandemic created challenging and unprecedented circumstances that pushed educators and learners to a virtual world that not all were completely prepared to embrace (Butnaru et al., 2021; Fernandez & Shaw, 2020; Montenegro-Rueda et al., 2021; Sands & Shushok, 2020). It has been argued that our lack of preparedness for the catapult to virtual learning jeopardized integrity across learning settings with reports of an increase in departures from academic integrity with students from across a variety of programs in post-secondary settings (Amzalag, et al., 2022; Comas-Forgas et al., 2021; Dodak et al., 2021; Ikram, 2021; Lancaster & Cotarlan, 2021; Steinberger et al., 2021; Verhoef & Coetsier, 2021).

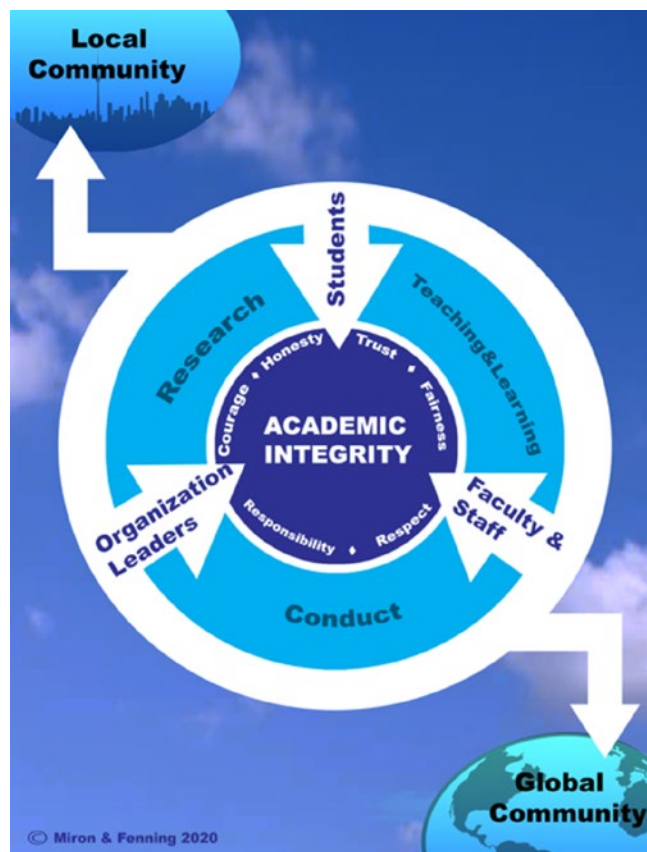


Figure 1. Promoting Academic Integrity Framework

Amzalag and colleagues (2021) noted that higher education students (N=81) in several schools across Israel reported cheating on online tests during the pandemic, when they thought there was little risk of getting caught, disliked the professor, or were experiencing academic difficulties. A search engine data review in Spain revealed that higher education students' activities increased during COVID relative to searches for ways to cheat online ($p < 0.05$; Comas-Forgas et al., 2021). Comas-Forgas and colleagues theorized that the increase was suggestive of an increase in student cheating on online exams. Dodak et al. (2021) found that Turkish students took advantage of technology to cheat during COVID ($p < 0.05$; N=30) in their study of economics students. A retrospective study of undergraduate Pakistani medical students (N=97) compared exam results from online versus traditional approaches (Ikram, & Ali Rabbani, 2021). The reduced explanatory power of their predictor model suggested a higher incidence of dishonesty for online examinations. The researchers also noted that the "scarcity of resources and IT infrastructure, lack of training and acceptance among students and faculty, and fear of compromised academic integrity" (Ikram,

& Ali Rabbani, 2021, e13911) may have contributed to integrity violation issues. A review of science, technology, engineering, and mathematics (STEM) students' requests to a file-sharing site (Chegg) over a two-year period revealed the impact of COVID-19 with a noted increase of 196% for questions asked with an expected live short turn-around response (Lancaster & Cotarlan, 2021). This finding suggests that students can get live responses to online exam questions quickly and the researchers noted this increase corresponded with the move to online testing during the pandemic. The finding gives merit to worries that integrity of online testing is at risk for breaches. Steinberger et al. (2021) reported that in their study of social science undergraduates (N=316), limited interpersonal communication and social interaction during the learning experience intensified student stress and increased their likelihood of engaging in academic dishonesty (p. 13). Increased stress was only one reason for departures from academic integrity reported by South African students (N=10) who shared their perspectives on academic integrity during COVID while learning online. They also suggested dishonest behaviour was higher because of poor time management skills and student struggles with technology (Verhoef & Coetser, 2021). While none of these studies address the Canadian student perspective specifically, it is not unlikely that our post-secondary students are any different. In fact, this lack of Canadian literature may be more an indication of the general issue of our slow growing literature on academic integrity in Canada, and the continued need for Canadian-focused research and writing on the topic.

Tracking departures from academic integrity within our faculty has been challenging but certainly the concern of increased rates of dishonesty was anecdotally reported by faculty and students. Faculty had firsthand experiences with online testing integrity as noted through a number of different metrics like discrepancies in how long students were taking to complete one question, suggesting that they were waiting to find out how others answered once they got to that question on a test or exam. Faculty reported students sharing assignments despite clear directions that prohibited such sharing and concerns about the accuracy of who was in fact writing or completing assignments that would be graded. Students anecdotally shared examples where they felt pressured to participate in groups that were working together to circumvent a particular test or assignment through shared social media sites. It is also important to

note that both groups shared how stressful these events and interactions were and how challenging it was to maintain integrity within the evaluation processes. Externally, the surge of incidences of departures from academic integrity during the pandemic was national and international realities, sparking concern for the quality of our educational programs and future educational offerings (Cullen, 2021).

These experiences and the literature made it clear that creating and sustaining cultures of learning integrity dictate the need for a multi-dimensional undertaking, with cooperation and commitment of all learning community members (Gamage et al., 2020). These realities inspired the strategic planning efforts for the Faculty of Health Sciences & Wellness – Academic Integrity Council (FHSW – AIC).

Method

The FHSW – AIC

The FHSW – AIC was struck in 2013 with the mandate of advising the Senior Dean for matters related to promoting and enhancing academic practices across the Faculty of Health Sciences & Wellness. The council consists of membership from within the FHSW and across Humber to ensure robust and diverse perspectives (e.g., Humber Library, Humber Testing Services). Students are an integral part of the council and while they do not sit on the council, they are engaged at different points in planning and delivering student academic integrity offerings. Students have participated in professional presentations and a variety of international activities. The council is co-chaired by a faculty member and a coordinator who herald from two different programs within the FHSW.

The Faculty of Health Sciences & Wellness (FHSW) Framework

A framework (Figure 1) developed by the co-chairs of the FHSW Academic Integrity Council served to ground the efforts of council members to create a plan to continue the building and strengthening of an academic integrity culture. All members of the learning community were considered within the context of the strategic planning to ensure that the plan would support a shared commitment and responsibility to building and strengthening an academic integrity culture. Within the integrity culture the framework supported the Council to consider teaching/learning, research, and how we might positively influence the conduct of all members of our learning community to be consistent with integrity

behaviours (see Figure 1). The FHSW Academic Integrity Council met virtually to brainstorm and discuss a strategic plan to strengthen and cultivate our culture of academic integrity across all learning locations within our faculty. The draft strategic plan was presented and approved by senior management with action plans to move ahead with different activities immediately and over the next several months.

The Council recognized that the pandemic has been stressful for everyone as we continue to navigate through our new ways of being and doing. The students are especially vulnerable as they continue to experience the loss of connections to their friends, learning communities, familiar structures, and routines to learning and learning environments. Understanding our students' stress and sources for stress are important if we consider the findings from existing research (Steinberger et al., 2021; Verhoef & Coetser, 2021) that link student stress to students' behaviours and their potential to depart from integrity in their studies. The loss of social rituals such as new student orientation, study groups, and a physical presence on campus forces students to find ways to manage their academic lives and learning differently from our past traditional in-person learning settings. The chaos, shock, fear, and uncertainty heightened by the pandemic cannot be underestimated for its far-reaching effects on the lives of our students as well as faculty, staff, and academic leadership teams. So, consideration, kindness, respect, and patience in our planning efforts were at the forefront of the Council members' thinking about strategies to promote and strengthen integrity and were foundational considerations as we constructed our strategic plan.

That being said, the pursuit of promoting and strengthening a culture of academic integrity within the FHSW, with an emphasis on ethical and professional obligations of the students and faculty is paramount and remained an unwavering goal for the strategic plan. The worry that a gap in student understanding of the expectations and importance of ethical behaviour may have widened because of the sudden shift to online learning remained a concern. A recent survey completed by FHSW students (N=246) revealed that 18% of students did not believe or felt unsure that faculty had explained academic integrity to them in their coursework, and almost 51% believed that faculty would ignore a breach of integrity (Miron and Fenning preliminary study results not yet published). These gaps must be addressed and remedied if we are to support a

culture of integrity that is valued across all members of our learning community. Research has supported this worry and suggested that the pandemic has increased a lack of mutual trust between students and faculty (Amzalag et al., 2021). It is believed that anxiety, complicated by current circumstances, plays a significant role in compromising the student's moral code and is resulting in increased incidences of academic dishonesty (Steinberger et al., 2021).

Results

Existing Structures to Support Faculty and Staff

In discussing faculty's part in the development of a culture of academic integrity, researchers conclude that the faculty's "role in building an environment that supports academic integrity is essential" and is both an "obligation and an opportunity" (McCabe, Butterfield, & Trevino, 2012, p. 147). We would be remiss as a Council if we did not take the time to explore how to support and engage our faculty members and staff. Collectively, the AIC is working on identifying existing structures within the faculty, college, and provincial landscapes that could be used as avenues to promote awareness and engagement among faculty and staff. Our first strategic priority that we will be undertaking is increasing faculty engagement and involvement in creating, sustaining, and strengthening learning environments that value integrity. So far, the following structures were identified and will be targeted as focal points in reaching and influencing our faculty: faculty orientation, inter-professional education, curating the digital faculty handbook, and partner opportunities with neighbouring colleges and universities developing micro credentials and programming in academic integrity content.

Our second strategic priority is to strengthen the engagement of the leadership groups within the FHSW and Humber College, in our efforts. Our goal is to strengthen and anchor our learning communities within the values of academic integrity so that the notion of a shared approach to building such a culture is clearly established (Bertram Gallant & Drinan, 2008). So far, we have met with success in terms of being members of the International Centre of Academic Integrity (ICAI) with multiple senior leaders as contacts registered at ICAI. These points of contact allow our leaders to receive regular updates, blog posts, and other items from ICAI.

The Council also assessed resource gaps, determining a third strategic goal focusing on future initiatives to include: an online, indexed repository of short, just-in-time resources, a needs and priorities survey for faculty and staff, and a YouTube playlist of resources. It is important to note that in at least one Canadian university such endeavours were assigned a dedicated annual budget (Prins & Lathrop, 2014), reinforcing the recognition of academic integrity as a key principle. Resource support will be sought out as needed for the development of potential academic integrity resources. The planning and prioritizing of efforts are now the work for fall of 2022.

Stakeholder support and group effort are instrumental in introducing an honour and integrity program and prepare students to understand the expectations of future employers around ethics and compliance (Eury, & Trevino, 2019). Seeking to engage currently under-represented groups and build a fulsome, holistic community in support of academic integrity, the Council proceeded to pinpoint opportunities for expanded awareness, including groups from other faculties, part-time conference presentations, plus stakeholder and advisory groups. Again, these efforts will be further developed in the upcoming fall semester and will require a solid communication and marketing approach that will be undertaken in the upcoming academic year 2022-2023.

Student engagement continues to be an important strategic direction for the FHSW Academic Integrity Council. A media campaign will be undertaken in the fall of 2022 that will focus on academic integrity and coincide with the international day of action undertaken by the ICAI against contract cheating. Contract cheating is the act of submitting work that was completed by a third party and then submitted for a mark or grade. While contract cheating is the main focus for the ICAI day, our campaign will run for one week around the ICAI day and broadly work to increase the awareness of students, faculty, staff, and leaders within our school to important content related to academic integrity. The **Boost and Bolster** campaign is set to engage students by way of their student groups through Instagram, Twitter, and TikTok. On five consecutive days a posting will happen that shares important academic integrity content, connected to a link where users can get more information. This is intended to **boost** their understanding of academic integrity specific to what it looks like in the post-secondary setting, what resources are available at Humber to help them with their integrity efforts, and what the expectations

are for conduct, behaviour, and learning with integrity as per our procedural rules. Students will be encouraged to push these daily shares through their own personal social media platforms with the goal of **bolstering** others in our community to learn as well. Of course, we will be including faculty, staff, and leaders in the campaign and will also incorporate various media sources around our campuses as an additional way to share, including Humber televisions. Additionally, for faculty and staff we will be co-hosting an Academic Integrity Community of Practice with the Centre for Innovative Learning, that will begin later in the fall of 2022. The intent of this group is to provide an opportunity for sharing of ideas and practices that focus on academic integrity and will be open to all faculty and staff across Humber College.

Discussion

Future Considerations

Building upon the previous determinations, the Academic Integrity Council identified two major future initiatives of importance. First, there is a need to focus on ways to deliberately incorporate technology with a focus on quality, beyond its urgent implementation during the COVID-19 pandemic. Secondly, there is a need to advocate for the continued development of evidence-informed practices, training sessions, and information technology support for digital learning, assessment, and evaluation. We know that students are departing from academic integrity more during COVID-19 because of accessibility to online content issues, poor monitoring, academic inexperience, and increased stress (Verhoef & Coetser, 2021). Combating these factors must be a joint effort with continuous and responsive approaches to maintain and nurture cultures that value integrity. Additionally, efforts must continue to incorporate relevant research and engage in research that will continue to inform next steps or preferred practices within our faculty.

Impact

The work completed by the FHSW AIC is important and contributes to our growing body of knowledge related to academic integrity and specific to the repercussions of the pandemic in Canada. We continue to evolve in a post-COVID world, and it is important to understand that collaboration and a shared approach to our ways of being and doing are essential in order to thrive.

Conclusion

In the face of the unexpected demands of a global pandemic, this Council remains steadfastly determined to continue to holistically support and strengthen a culture of academic integrity, preparing graduates for success in both local and global communities. While many of our initiatives are in progress, and it is difficult to report the metrics associated with the initiatives, anecdotally we are receiving feedback from leaders, faculty, and students that has been positive and suggests interest and curiosity. Our systematic approach to our strategic planning offers a template for other educational organizations to consider as they work through the new challenges presented to how we deliver educational programming, and specifically how we continue to engage students, faculty, and leadership in the work of teaching and learning with integrity.

Conflict of Interest

None of the authors has a conflict of interest.

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References

- Amzalag, M., Shapira, N., & Dolev, N. (2022). Two sides of the coin: Lack of academic integrity in exams during the corona pandemic, students', and lecturers' perceptions. *Journal of Academic Ethics*, 20(2). 243-263. <https://doi.org/10.1007/s10805-02109413-5>
- Bertram Gallant, T., & Drinan, P. (2008). Toward a model of academic integrity institutionalization: Informing practice in postsecondary education. *Canadian Journal of Higher Education*, 38(2), 25-43.
- Comas-Forgas, R., Lancaster, T., Calvo-Sastre, A., & Sureda-Negre, J. (2021). Exam cheating and academic integrity breaches during the COVI-19 pandemic: An analysis of internet search activity in Spain. *Helyon*, 7(10), e08233.
- Cullen, C. (2021, August 3). *Bracing for continued increased cases*. International Centre for Academic Integrity. <https://academicintegrity.org/blog/70-2021/august-2021/283-bracing-for-continued-increased-cases>
- Dodik, J., & Triadi Agung, S. & Taugiqi, R. (2021). Fraud triangle misuse of information technology and student integrity toward the academic cheating of UM student during the pandemic Covid-19. *Research in Business & Social Science*, 10(6), 329-339.
- Eury, J. L., & Trevino, L. K. (2019). Building a culture of honor and integrity in a business school. *Journal of Management Education*, 43(5), 484-508. <https://doi.org/10.1177/1052562919850223>
- Gamage, K., de Silva, E., & Gunawardhana, N. (2020). Online delivery and assessment during COVID-19: Safeguarding academic integrity. *Education Sciences*, 10(301), 1-24. 10, 301; doi:10.3390/educsci10110301
- Goldberg, D. (2021). Programming in a pandemic: Attaining academic integrity in online coding courses. *Communications of the Associations for Information Systems*, 48, 46-53. <https://doi.org/10.17705/ICAIS.04807>
- Guerrero-Dib, J., Portales, L., & Heredia-Escorza, Y. (2020). Impact of academic integrity on workplace ethical behaviour. *International Journal for Educational Integrity*, 16(2), 1-18. <https://doi.org/10.1007/s40979-020-0051-3>
- Ikram, F., & Rabbani, M. (2021). Academic integrity in traditional vs online undergraduate medical education amidst COVID-19 pandemic. *Cureus*, 13(3). E13911.
- International Center for Academic Integrity. (2021). *Fundamental values of academic integrity*. <https://academicintegrity.org/resources/fundamental-values>

- Lancaster, T., & Cotarlan, C. (2021). Contract cheating by STEM students through a file sharing website: A Covid-19 pandemic perspective. *International Journal for Educational Integrity*, 17(3), 1-16. [Doi.org/10.1007/s40979-021-00070-0](https://doi.org/10.1007/s40979-021-00070-0)
- McCabe, D. L., Butterfield, K. D., & Treviño, L. K. (2012). Cheating in college: Why students do it and what educators can do about it. *Johns Hopkins University Press*. <https://ebookcentral-proquest-com.ezproxy.humber.ca/lib/humber/detail.action?docID=3318632>
- Miron, J., (2016). *Academic integrity and senior nursing undergraduate clinical practice* [Unpublished doctoral dissertation]. Queen's University.
- Prins, S., & Lathrop, A. H. (2014). Institutional strategies that foster academic integrity: A faculty-based case study. *Collected Essays on Learning and Teaching*, 7(1), 32. <https://doi.org/10.22329/celt.v7i1.3998>
- Reedy, A., Pfitzner, D., Rook, L., & Ellis, L. (2021). Responding to the COVID-19 emergency: Student and academic staff perceptions of academic integrity in the transition to online exams at three Australian universities. *Int J Educ Integr* 17(9), 1-32. <https://doi.org/10.1007/s40979-021-00075-9>
- Sands, T., & Shushok, F. (2020, October 16). The COVID-19 higher education shove. *EDUCASE review*. <https://er.educause.edu/blogs/2020/10/the-covid-19-higher-education-shove>
- Steinberger, P., Eshet, Y. & Grinautsky, K. (2021). No anxious student is left behind: Statistics anxiety, personality traits, and academic dishonesty—Lessons from COVID 19. *Sustainability*, 13(4762), 1-18. <https://doi.org/10.3390/su13094762>
- Verhoef, A. H., & Coetser, Y. M. (2021). Academic integrity of university students during emergency move online assessment: An exploration of student voices. *Transformation in Higher Education*, 6(4), e1-e12. <https://doi.org/10.4102/the.v6i0.132>

Regenerative Revolution: How Canadian Polytechnics are Leading the Charge

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***Innovation Spotlights** extremely brief contributions that highlight an innovative teaching practice, approach, or tool, and provide accompanying evidence that speaks to the effectiveness of the innovation.

Abstract

Canada's polytechnics have long been at the forefront of innovations in sustainability and combatting climate change. These institutions have the capacity to play a critical role in driving the adoption of climate-conscious practices throughout industry and the wider community. As the need to move past sustainability and propel the adoption of regenerative practices is better understood, polytechnics are uniquely positioned to drive this shift. This paper explores the concept of regenerative design and how Canada's polytechnics have employed on-campus initiatives and infrastructure projects in three broad categories: production of excess energy, recycling and reusing waste or runoff, and ecological (re)integration. Through these endeavours, the institutions are positioning themselves as role models and intermediaries able to introduce and help stakeholders adopt regenerative practices. Maximizing this capacity is an important way the Government of Canada can achieve its climate-related objectives as laid out in the 2022 Federal Sustainable Development Strategy. By harnessing polytechnic regenerative expertise and their deep ties to both industry and their surrounding communities, Canada will be better positioned to meet its ambitious climate targets.

Introduction

A sustainability-focused approach to combatting environmental degradation and resource scarcity is now critical. It is no longer viable to consume the world's natural resources or develop our natural landscape in the manner of the last century. At current rates of fossil fuel consumption, climate models predict that Earth's global average temperature will rise an additional 4°C (7.2°F) during the 21st Century, threatening coastal cities, increasing the frequency of natural disasters and heightening the risk of extinction among numerous plant and animal species (UCAR, 2022).

Achieving the net-zero targets outlined in the 2016 Paris Climate Accords stands to slow the pace of environmental degradation and extend livability on the planet. That said, arguably the most important outcome of the Accords was not emissions targets, but acknowledgement by the leadership of 193 countries that

immediate action must be taken to mitigate the degradation of the natural environment (United Nations, 2021). Where current climate agreements and policies fall short is in the failure to recognize that the planet needs more. Rather than just minimizing damage, the environment requires efforts to actively renew, revitalize and repair. This is where regenerative design principles come into play.

Regenerative design is an approach intended to produce net-positive benefits to the health of ecosystems, communities and the broader environment. While not yet a part of mainstream policy or discourse, Polytechnics Canada has identified leadership in this area among its member institutions. Sometimes unintentionally, Canada's polytechnics are propelling regenerative design with pragmatic approaches that are broadly replicable, drawing on faculty and student expertise, world-class research facilities and close ties to industry. This paper provides just a few examples of how Canada's polytechnics are leading the way.

From Sustainability to Regeneration: Recognizing the Need to do More

As mentioned above, regenerative design can be simply defined as an approach intended to produce net-positive benefits to the health of ecosystems, communities and the broader environment. The concept, however, is more complex, and is representative of a paradigm shift within the field of sustainability. Examining how polytechnic institutions stand to serve as catalysts for a wider movement towards regenerative design therefore requires an understanding of the relationship between regeneration and sustainability.

The most widely quoted definition for sustainability and sustainable development comes from the UN World Commission on Environment and Development. The Commission defines sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their own needs (Thomsen, 2013). This definition forms the ethos of the United Nations Sustainable Development Goals (UNSDGs), the framework for improving the lives of people around the world and mitigating the effects of climate change.

In Canada's Federal Sustainable Development Act (June 2008), the government adopted this definition of sustainability and committed to the pursuit of the 17 UNSDGs, a commitment reaffirmed in the 2016 Paris

Climate Accords (Environment and Climate Change Canada, 2021).

The UN has defined sustainability as the mitigation and reduction of harmful practices, a relationship that requires humankind to limit its consumption of the earth's resources and curtail the degradation of ecological health. For example, the Canadian government's promise to act on climate change focuses on reducing greenhouse gas emissions and developing strategies related to mitigation, adaptation and impact reduction (Environment and Climate Change Canada, 2021). This approach to sustainability – reduction and mitigation – has dominated political discourse and related public policy.

Other concepts of sustainability go further, advocating for a symbiotic relationship between humans and the environment and requiring a more active role in revitalizing natural systems. For example, in the charter for the UCLA Sustainability Committee (University of California Los Angeles, 2021), sustainability is defined as “the integration of environmental health, social equity and economic vitality in order to create thriving, healthy, diverse and resilient communities for this generation and generations to come.” The United States Environmental Protection Agency (2021) subscribes to this approach, asserting that everything we need for survival and well-being depends, directly or indirectly, on the natural environment, requiring humans and nature to exist in productive harmony.

This systems-oriented approach is the basis of regenerative design. It goes further than mitigating the negative impacts of climate change by asking humankind to embrace, design and participate in net-positive approaches to our natural systems. There is broad consensus that regenerative design seeks to work as a positive force that restores, renews or revitalizes.

Mang and Reed (2012) suggest regenerative development¹ and design as a framework for creating, applying, adapting and integrating modern and ancient technologies to the design, management and continuing evolution of sustainable built environments. Regenerative approaches reverse the degradation of the planet's natural systems and design

1 Regenerative development relates to regenerative design in that the former determines the right phenomena to work on, or to give form to, in order to inform and provide direction for regenerative design solutions that can realize the greatest systemic potential.

human-driven systems that co-evolve to generate mutual benefits, improve life on the planet and create resilience for the future.

For Mang and Reed (2012), a regenerative approach is defined by the following characteristics:

- Place-sourced and place-specific;
- Evolutionary, embedding capacity to improve performance through time and variable environmental conditions;
- Bigger than functional performance goals;
- Addresses human aspiration and capacity to effect change in their immediate environment; and
- Focuses on processes and systems in physical structures.

Similarly, Colin Rohlfling (2021), director of sustainable development at HDR, an engineering, architecture, environmental and construction services firm, suggests the following regenerative development goals:

- Achieve net-positive impacts for ecology, health and society;
- Adapt its concepts for all project types (including existing buildings) and sizes;
- Generate decisions that are metric based and driven by unique site data;
- Produce projects that continuously evolve and renew;
- Incorporate and build upon existing paradigms, such as triple net-zero (energy, water and waste), carbon balancing (embodied and operational carbon) and social equity; and
- Engage and involve the community on a continuous basis.

Synthesizing these complementary approaches, this paper proposes three overarching goals for a regenerative design project: to implement solutions based on site-specific ecological characteristics and existing infrastructure; ensure that each project benefits and transforms the surrounding socioeconomic and ecological systems; and develop value-adding processes that indefinitely serve stakeholders and the environment beyond the project building and site.

Exemplars of Regenerative Design in Canadian Polytechnics

While regenerative design most commonly focuses on developing new or modifying existing infrastructure (i.e., buildings), a regenerative project can be any endeavour

that is designed to restore, renew or revitalize. Though the concept of regenerative design has not yet been explicitly and fulsomely integrated into sustainability plans at Canada's polytechnics, these institutions have almost universally begun to adopt systems-oriented approaches to sustainability. The term regenerative design is not yet ubiquitous on campuses, but polytechnic sustainability ventures have begun to move past net zero and are more frequently seeking to generate future value to the environment and surrounding communities. In doing so, they have made strides towards the wholesale adoption of regeneration, integrating regenerative design into on-campus initiatives, research, partnerships, and infrastructure projects.

On polytechnic campuses, regenerative design is manifested in different ways, though there are some common threads. In highlighting some innovative regenerative design projects, we also see opportunities for polytechnics to facilitate the widespread adoption of regenerative design principles. This paper has grouped these projects into three categories representing divergent approaches to regeneration which represent only a snapshot of the potential positive impact of polytechnic regenerative design projects and partnerships.

Producing energy from renewable sources to power the campus and beyond

One area where polytechnics excel is in the development of buildings that produce excess energy without a detrimental ecological footprint. Whether solar, wind or geothermal, clean energy production is the cornerstone of these campus infrastructure projects. Buildings are not only self-sufficient in terms of energy use but produce sufficient excess energy to power adjacent buildings. These projects have further positive downstream impacts on surrounding ecology and the communities in which they are situated.

For example, the British Columbia Institute of Technology's Aerospace Campus features a geothermal heat pump that serves as the primary heating and chilled water system for the entire campus. The system uses a massive concrete slab in the campus's central hangar as a radiant heat source with air-to-air heat recovery that provides warmth to adjacent shops and classrooms (Olympic International, 2020).

The physical space and surrounding environment were both major factors in the decision about where and how to design the building. The campus is set well back from the Fraser River's shoreline and a greenbelt buffer of trees and bushes

was preserved to form a natural break between the river and the campus (British Columbia Institute of Technology, 2008).

A similar geothermal system can be found at neighbouring Kwantlen Polytechnic University's Surrey campus, where radiant floor technology is used to heat and cool the majority of the Arbutus building as well as parts of the Surrey Main building (Kwantlen Polytechnic University, 2016).

These geothermal systems achieve the overarching goals of regenerative design. As a renewable source of energy, geothermal is both location- and site-specific. The nature of geothermal is such that these projects create a sustainable and long-term source of energy for the campus and its surrounding communities. Projects can be expanded to generate further energy to share among diverse stakeholders, further reducing overall reliance on non-renewable energy.

Repurposing waste and runoff for ecological rehabilitation

Another category of polytechnic regenerative projects involves systems that reappropriate waste and runoff. These projects promote the health of waterways on and near campuses, reduce strain on storm water systems and reduce overall water consumption. Waste and runoff are reused as fertilizer, helping to revitalize biodiversity on campus or used in ways that support student projects or commercial agriculture.

For example, at Fanshawe College's Simcoe Campus, a series of trenches have been dug to allow storm water to percolate into the soil. This helps replenish groundwater, decrease pollutants flowing into streams and reduce the burden on municipal storm water systems. On the same campus, rainwater hitting a green roof is collected in an underground storage tank. This water is recycled to flush toilets and water gardens (Fanshawe College, 2022).

Seneca College's King Campus has developed a similar system, where sludge created by sewage runoff is redirected to adjacent farm fields and serves as fertilizer (Prior et al, 2012). Like Fanshawe, Seneca's system mitigates the risk of pollutants permeating groundwater and polluting other water sources.

Both institutions have put regenerative design to use by reappropriating water which might otherwise have gone to waste. Projects were built around the unique geographical features of the campus and work to actively improve

conditions in the surrounding ecology. Both institutions are committed to engaging with stakeholders who stand to be impacted by any given project, including students, faculty, municipal leaders and local farmers, adding value for both people and the environment (Seneca College, 2021; Whittingham, 2020).

Transforming campus spaces to introduce and promote biodiversity

Polytechnics also host projects that seek to explicitly create or bolster new and existing ecological features within human-built spaces. These projects promote ecosystem enrichment by creating spaces for native vegetation and animal species to flourish. By providing learning opportunities and promoting biodiversity on and near campus, these projects also incent stakeholders to actively maintain the ecological landscape, enabling benefits in perpetuity.

At Humber College, artificial beehives have been installed at the North and Lakeshore campuses as well as the Humber Arboretum. A pollinator garden was installed at the school's Centre for Urban Ecology. The Arboretum and hives at Humber allow the school to offer a Sustainable Beekeeping course, with topics ranging from equipment to growing native plants. The institution has also partnered with Bee City Canada to ensure the health of native bee species in the 250 acres of natural space surrounding the campuses. Honey is harvested and used by Humber's Culinary Management students (Humber College, 2021).

At Red River College Polytechnic (RRC Polytech), the Notre Dame Campus is also home to a pollinator garden, located on the east side of the arboretum. This garden is complemented by rooftop beehives that keep bees and other pollinators well-fed with nectar or pollen-producing plants. The installation has become the site of workshops on subjects such as honey extraction. Honey is also used by RRC Polytech's Paterson GlobalFoods Institute (Red River College Polytechnic, 2018).

Both polytechnics have fully embraced the principles of regenerative design in their pollinator projects, creating space for native bee species to thrive and ensuring a healthy population of pollinators for surrounding vegetation. Learning opportunities generated by these projects add value to the local community.

This section has highlighted the first way in which polytechnics can and are helping to propel regenerative design to the fore of the Canadian consciousness. By

engaging in projects similar to those listed above, the on-campus student population is being directly exposed to the importance and potential of regeneration. Such projects equally serve as exemplars for both government and industry as to the myriad ways in which regenerative design can be embedded into physical spaces.

Regenerative Design and the Circular Economy

In March 2022, the Government of Canada released its Federal Sustainable Development Strategy. The strategy includes a higher level of ambition for transparent and accountable sustainable development decision-making. Reflecting the 17 United Nations Sustainable Development Goals, the strategy primarily focuses on sustainability by advocating for shifts toward renewable energy sources and an overall decrease in the consumption of non-renewable energy (Environment and Climate Change Canada, 2021). In his foreword, the Honourable Steven Guilbeault, Minister of Environment and Climate Change, explains that the draft strategy reflects the principle of intergenerational equity (Government of Canada, 2021).

Though a sustainability-focused approach is a necessary starting point in the pursuit of intergenerational equity, proponents of regenerative design argue that sustainability alone is insufficient. To provide equitable opportunity for future generations, we must both limit human impact on the environment and actively work to repair and regenerate. The Government of Canada's draft strategy notionally recognizes the need for regeneration by referencing the circular economy. Specifically, it advocates for the widespread application of the three founding principles of the circular economy: designing pollution and waste out of the economy, keeping products and materials in use, and working with nature to regenerate and enhance ecosystems – principles which mirror those of regenerative design² (Environment and Climate Change Canada, 2021).

Incorporating regenerative design into infrastructure

2 The Ellen MacArthur Foundation (2022) defines the circular economy as a systemic approach to economic development designed to benefit businesses, society, and the environment. In contrast to the 'take waste' linear model, a circular economy is regenerative by design and aims to gradually decouple growth from the consumption of finite resources.

and development projects would facilitate the transition toward a circular Canadian economy. Regenerative design inherently seeks to reduce pollution and waste, re-use and recycle materials and existing structures, and regenerate surrounding ecosystems. Industry-aligned polytechnic applied research facilitates the adoption of these principles.

Applied research refers to an exceptionally broad range of supports delivered in response to industry demand. Polytechnic institutions across Canada mobilize state-of-the-art facilities, equipment and expertise to deliver solutions for partners across industrial and social sectors, always in partnership and often with the help of student talent. As a result, institutions have a flexible and agile applied research infrastructure that adapts to the unique requirements of a partner and their project. This capacity positions polytechnics to export regenerative principles and ideas to industry, thus facilitating the transition to a circular economy.

One of the most notable examples is The Confluence, a "net-positive" home developed by Southern Alberta Institute of Technology (SAIT) Green Building Technologies in partnership with Woodpecker European Timber Framing. Contracted by a young family and working with a modest budget, SAIT and Woodpecker designed and constructed a home that was only one of three worldwide to comply with the standards of the Living Building Challenge (Cox, 2021).

The home's water and energy use are sustainable. The build used non-toxic, salvaged and natural materials. Highlights underscoring the regenerative principles include:

- The Materials Conservation Management Plan ensures 90-100 per cent of waste is diverted from landfills both during construction and operation;
- Both potable and non-potable water required by the homeowners is designed to be collected by harvesting rainwater and an onsite well;
- 105 per cent of the energy requirements is captured through 35 roof-mounted solar panels, with the potential to redirect energy back to the grid;
- Tours, open houses and a project website showcase the creative solutions employed, educating the public and encouraging others to use similar strategies (The Confluence, 2021).

This project demonstrates how polytechnic expertise and capacity can bring regenerative solutions into mainstream, industry use. The Confluence is just one example of a type of regenerative project to which a Canadian polytechnic

could bring expertise. Significant potential exists for the Government of Canada to leverage this capacity in its pursuit of environment-related ambitions and the circular economy through the support of applied research partnerships centred on regenerative solutions. Achieving true intergenerational equity will require more than a net-zero approach, and Canada's polytechnics – with the right support – are ready to lead the charge in the regenerative revolution.

Given the necessary involvement of students, applied research projects at Canada's polytechnics can also serve as important learning opportunities with respect to regenerative design. Learners are exposed to the practical deployment of regeneration, gaining hands-on experience realizing regenerative solutions and learning how such principles can be employed by industry. By committing to pursue applied research projects centred on regeneration, polytechnics can play an important role in ensuring that the workforce of tomorrow is well-equipped to further embed regenerative practices across industries. Polytechnics have the capacity to further disseminate an understanding of regenerative design by embedding its principles across curricula, programs and workshops. In doing so, these institutions can help create a population that is more cognizant both of how human actions are causing our natural world to degrade and the actions and policies they can support to rectify this damage.

Conclusion

Reaching Canada's climate change and net-zero targets is simply insufficient – we need to reach beyond these objectives to leave the environment better than we found it. To capture the imagination and climate ambitions of this generation, a focus on regenerative design is key. The concept of intergenerational equity – ensuring the next generation has the resources and requirements needed to succeed to the same degree as past generations – is a powerful goal. Polytechnics are well-positioned to lead the charge.

With significant footprints in large urban centres and a stakeholder community that understands the need for climate change action, polytechnics sit at the intersection of talent and industry. Applied research expertise enables polytechnics to push new ideas and knowledge out to industry partners, municipalities and the general public. They equally serve as valuable educational opportunities,

further exposing participating students to real-world applications of regeneration. By embedding regenerative design principles and pragmatic solutions in programs and workshops, institutions can impart an understanding of environmental degradation to their surrounding communities and ensure individuals have the skills to proactively address it. Finally, polytechnics are positioned to be community exemplars, using solar and geothermal energy on-campus, implementing green roofs and walls, and engaging in active initiatives to reduce, reuse and recycle.

While the work already underway is impressive, there is room for more. As governments seek to move on their net-zero ambitions, Canada's polytechnics are a natural destination for investments. Building on existing capacity and examples is a good start.

Note on Contributor

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References

- About the Confluence*. The Confluence. (2021). <https://theconfluence.ca/>
- British Columbia Institute of Technology. (2008). *Celebrating 50 Years of Leadership in Aerospace*. British Columbia Institute of Technology. https://www.bcit.ca/files/marcom/pdf/bcit_aerospace0708.pdf
- Cox, A. (2021). *The confluence: Possibly the world's Greenest Home*. The Calgary Herald. <https://calgaryherald.com/life/homes/new-homes/the-confluence-possibly-the-worlds-greenest-home>
- Ellen MacArthur Foundation. (2022). *Circular Economy Introduction*. Ellen MacArthur Foundation. <https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>
- Environment and Climate Change Canada. (2021). *Achieving a Sustainable Future: Draft Federal Sustainable Development Strategy 2022 to 2026*. Environment and Climate Change Canada. https://www.fsds-sfdd.ca/downloads/2022-2026_DRAFT_FSDDS.pdf
- Whittingham, A. (2020). *Facilities Operations and Sustainability Waste Audit Report*. Fanshawe College. https://www.fanshawec.ca/sites/default/files/2020-07/waste_audit_report.pdf
- Fanshawe College. (2022). *Sustainability Catalogue*. Fanshawe College. <https://www.fanshawec.ca/about-fanshawe/corporate-info/sustainability/sustainability-catalogue>

- Government of Canada. (2021). *Introducing Our Strategy*. The Federal Sustainable Development Strategy. <https://www.fdsd-sfdd.ca/en/introducing-our-strategy>
- Humber College. (2021). *Humber Is a Certified Bee Campus*. Humber College Office of Sustainability. <https://humber.ca/sustainability/humber-certified-bee-campus>
- Kwantlen Polytechnic University. (2016). *Efficiency Improvements Using Technology*. Kwantlen Polytechnic University. <https://www.kpu.ca/sustainability/efficiency-improvements-using-technology>
- Mang, P. & Reed, B. (2012). Regenerative Development Regenerative Development and Design. *Encyclopedia of Sustainability Science and Technology*, 8855–79. https://doi.org/10.1007/978-1-4419-0851-3_303
- Olympic International. (2020). BCIT Aerospace. <https://www.olympicinternational.com/projects/bcit-aerospace/>
- Prior, P., Miller, G., Gonsalves, N., & Moleirinho, P. (2012). *Seneca College King Campus Terrestrial Biological Inventory and Assessment*. Toronto and Region Conservation Authority. <https://trca.on.ca/dotAsset/186190.pdf>
- Red River College Polytechnic. (2018). *Bees: What's All the Buzz about?*. Red River College Polytechnic. <https://www.rrc.ca/redgreen/initiatives/bees/>
- Rohlfing, C. (2021). *Regenerative Design Doesn't Start with a Napkin Sketch*. Buildings. <https://www.buildings.com/articles/42852/regenerative-design-napkin-sketch>
- Seneca College. (2021). *Our Path Forward: Seneca Sustainability Plan 2021-2026*. Seneca College. <https://www.senecacollege.ca/content/dam/projects/seneca/about/sustainability/documents/seneca-sustainability-plan.pdf>
- Thomsen, C. (2013). Sustainability (World Commission on Environment and Development Definition). *Encyclopedia of Corporate Social Responsibility*, 2358–63. https://doi.org/10.1007/978-3-642-28036-8_531
- UCAR. (2022). *Predictions of Future Global Climate*. Center for Science Education. <https://scied.ucar.edu/learning-zone/climate-change-impacts/predictions-future-global-climate>
- United Nations. (2021) *The Paris Agreement*. United Nations. <https://www.un.org/en/climatechange/paris-agreement>.
- United States Environmental Protection Agency. (2021). *Learn About Sustainability*. United States Environmental Protection Agency. <https://www.epa.gov/sustainability/learn-about-sustainability#what>
- University of California Los Angeles. (2021). What Is Sustainability?. UCLA Sustainability. <https://www.sustain.ucla.edu/what-is-sustainability/>

Embracing Te Ao Māori to Rebuild a Sustainable Future for Chefs in Aotearoa New Zealand

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***Innovation Spotlights** extremely brief contributions that highlight an innovative teaching practice, approach, or tool, and provide accompanying evidence that speaks to the effectiveness of the innovation.

Abstract

The professional kitchen is a fast-paced environment often founded on hierarchical structures and stressful working conditions. Within this environment, tensions often run high resulting in aggressive behaviours, and at times, bullying and violence towards junior chefs. For the last decade the hospitality sector has been struggling to recruit and retain aspiring chefs into the professional kitchen. Compounding the recruitment issue is the social narrative that the hospitality industry is a poorly paid profession that works long and unsociable hours.

Due to the global pandemic the hospitality sector has suffered significant upheaval resulting in significant numbers of its workforce choosing to leave the industry. Like other countries around the globe, the hospitality sector in Aotearoa New Zealand is having to rethink and reset the way it operates in a new, post-covid landscape. Central to this is the questioning of established modes of practice and reimagining a new hospitality future.

In response to the changing landscape of hospitality, the Bachelor of Culinary Arts programme at Te Kura Matakini ki Otago (Otago Polytechnic), Aotearoa New Zealand developed a bicultural pedagogic framework that embraces te ao Māori values. As a strategy to educate chefs into alternative workplace behaviours and cultures the values of manaakitaka (care and integrity towards self and others), whānaukataka (integrity of relationship), and kotahitaka (a sense of collective unity and ownership) are deliberately integrated into the programme's pedagogy and the courses' learning outcomes. In doing so, this pedagogic framework upholds the worldviews, values, and mana of Aotearoa's takata whenua (Indigenous people), while also attempting to rebalance the historical practices of the professional kitchen.

Introduction

The global COVID-19 pandemic has had a massive and irreversible impact on the hospitality industry in Aotearoa (New Zealand), resulting in a mass exodus of workers and bringing to light a raft of issues with workplace culture (Williamson, Rasmussen, & Palao, 2022). Whilst devastating for businesses within the sector,

it has also forced a complete rethink of common practices and attitudes, resulting in an opportunity to reset the way it operates and treats its people (Williamson et al., 2022). The Bachelor of Culinary Arts programme at Te Kura Matakini ki Otago (Otago Polytechnic), Aotearoa New Zealand, has embraced this opportunity, using the timely Five Year Programme Review to redevelop the programme to help address such issues by embedding bicultural values within the pedagogy and curriculum.

This article will examine traditional culinary workplace culture in the context of the global pandemic, highlighting the need to return to values that focus on the care and wellbeing of the people within the industry. It will outline the work done by Bachelor of Culinary Arts kaimahi (staff) in the redevelopment of the degree, and the adoption of a bicultural framework built on the values of manaakitaka (care and integrity towards others and self), whanaukataka (integrity of relationships) and kotahitaka (a sense of collective unity and ownership). A discussion of the implementation of these values will go on to highlight the potential to change the trajectory of workplace culture and industry practices, ultimately improving the hauora (wellbeing) of our people and working environments.

Traditional Culinary Workplace Culture

Gordon Ramsay: *Hey you, yeah you...come here. Why aren't you wiping the f@*%king plates.*

Young Chef: *I don't know chef?*

Gordon Ramsay: *Every time there's food on the pass, where should you be...on the f@*%king pass! Now stay here, next time you're out...ok!*

(Graham, 1999)

In the comfort of our living rooms, many of us will have watched an innocent chef physically and emotionally succumb to the judgement of a Chef Master via shows like Hell's Kitchen or Boiling Point. These programmes glamourise the fast-paced nature of professional kitchens; but in doing so, they also expose the aggressive behaviours, which at times, play out within these environments.

Professional kitchens have a chequered history of adopting aggressive actions to cultivate worker productivity and enforce quality food production. Verbal, physical, and psychological abuse towards young chefs has traditionally been a widespread practice within the hospitality industry; albeit more evidently so within the fine dining sector (Burrow,

Smith, & Yakinthou, 2015). Chefs have commented that to be considered a legitimate member within the culinary arts community, they have had to resort to acts of aggression towards others to affirm their professional identities (Palmer, Cooper, & Burns, 2010). The following quote from the Burrow, Smith, and Yakinthou (2015, p. 679) study into the culture of professional kitchen highlights the normalisation of aggression towards vulnerable junior staff:

"Go and f@#king beat him up' and it would just happen – the guy would go over and start beating another guy up. That was normal, but everyone there was mad. The whole mentality of that place was completely warped."

Normalising such behaviours within the industry has been identified as a key influencing factor in chefs adopting aggression and exploitation within their leadership practice (Burrow et al., 2015). As Gill and Burrow (2018, p. 21) comment, "Fear was a tool used to support the [culinary arts] institution...passed on through generations of teaching and training," meaning, the practice of aggression is so deeply embedded within the culture of the culinary arts, that at times, the culinary arts would struggle to exist without it.

The abuse and exploitation of chefs is further evident within many restaurants' business models. Until recently, it was an accepted practice for salaried chefs to work over and above their contractual hours, unpaid. Working a 10-15 hour day and being paid for an eight hour day was not uncommon (Cole, Stuart, Hardy, & Spencer, 2022), and until the recent public ousting of a number of high profile chefs, wage theft was a widespread practice in the industry (Robinson & Brenner, 2021). Worker exploitation also continued to be practiced through the time-old tradition of stagiaire. Stagiaire is the practice of working for free under the guidance of an experienced chef, in much the same manner as an unpaid internship. It has its roots in the traditional French kitchen and was a means for young chefs to extend their culinary repertoire. However, many chefs built their menus and business models around this model of free labour, meaning many junior chefs in fine dining kitchens were working for no pay. The practice of stagiaire has recently come into criticism, whereby it is no longer viewed as an authentic relationship of learning, rather an exploitive business practice (Kauffman, 2019).

It is therefore no surprise that many hospitality operators who premised their business models on the exploitation of labour and allowed aggressive cultures to cultivate within

their workplaces have, in recent times, struggled to attract and retain a stable workforce.

The Aotearoa New Zealand Situation

As with other professional kitchens throughout the world, aggressive and exploitive practices operate within the Aotearoa New Zealand hospitality industry (Gong, 2017). Similar to other countries, there is an underlying social distrust within Aotearoa New Zealand of the hospitality sector's workplace practices (Williamson, 2017). As a result, within the last decade, many chef positions within Aotearoa have been filled by low-paid migrant workers. Many of these workers have come from impoverished countries, and they have worked in the hospitality sector as a pathway to permanent residency. While migrant labour has provided the hospitality sector with a short-term solution to its labour issues, the recent disruptions caused by the global pandemic have resulted in an exodus of migrant workers. The labour situation is further complicated due to a significant number of domestic workers having left the hospitality sector in search of an improved work-life balance and security of employment.

The hospitality staffing crisis within Aotearoa New Zealand means that many hospitality businesses have reduced their product and service offerings, and in some cases closed altogether. The staffing challenges are further intensified by recent changes in government policy, which has stemmed the flow of low-paid migrant labour into the hospitality and tourism industries (Smith, 2021).

In response to COVID-19 and a changing tourism landscape, the government of Aotearoa New Zealand has strategically repositioned the country's tourism industry (which includes hospitality) from a high-volume, extractive model, to a high-value, sustainable and regenerative industry (Tourism Industry Aotearoa, 2022). Within this strategic pivot, there is a recognition that if Aotearoa New Zealand is to reposition itself as a world-class tourism and hospitality destination, it needs to be a sustainable and regenerative industry. To that end, the government has identified that *tikaka Māori* (doing things the correct way) is critical in rebuilding a sustainable future for tourism and hospitality (Tourism Industry Aotearoa, 2022). Within a *tikaka Māori* mindset, operators will need to have staff physical and mental wellbeing front of mind. Gone are the days of churning and burning overworked and poorly paid hospitality workers in Aotearoa New Zealand (Williamson et al., 2022); rather, business models which

look after staff wellbeing, pay a living wage and provide opportunities for learning and progression are seen as vital in rebuilding a local workforce (Williamson et al., 2022). Furthermore, the government has made significant changes to Aotearoa New Zealand's immigration and employment legislation, forcing the hospitality sector to move away from a reliance on a low-paid and often exploited international workforce. Rather, employers need to place worker, community and environmental wellbeing at the centre of their decision-making processes (Hendry-Tennent, 2022).

A Bicultural Framework for Culinary Education

In 2019, the government of Aotearoa New Zealand announced the Review of Vocational Education (RoVE). The kaupapa (intent) of the RoVE is to create a "sustainable vocational education system that helps improve wellbeing for all New Zealanders and supports a growing economy that works for everyone" (Te Pūkenga, 2022). As part of the RoVE, Aotearoa New Zealand's polytechnics and Industry Training Organisations are currently transitioning into the state-led vocational education organisation, Te Pūkenga. A key focus for Te Pūkenga is the authentic honouring of Te Tiriti o Waitangi and supporting and empowering Māori learners through the integration of te ao Māori (the Māori worldview) within its programmes' pedagogic design and curriculum structures (Te Pūkenga, 2022).

In 2022, the Bachelor of Culinary Arts (BCA) programme at Te Kura Matatini ki Otago (Otago Polytechnic) commenced its five-year programme review. The Bachelor of Culinary Arts (BCA) programme is founded on the methods and wayfinding tools of design. It is an applied degree which primarily uses project-based learning to allow culinary arts' taura (learners) to acquire the skills, knowledge and capabilities required to operate as culinary practitioners. The programme operates in a holistic and integrated manner, requiring that taura engage in culinary problem-solving activities to demonstrate their professional skills and sense-making abilities from year one of the degree.

The timing of the BCA programme review, the government initiated hospitality reset, and the aspirations of the RoVE would become the catalyst for a redesign of a bicultural pedagogic framework for culinary education. The BCA pedagogy has traditionally operated within constructivist and humanistic pedagogic philosophies—philosophies situated within the western paradigm.

Working with industry leaders, members of the Kaitohutohu Office (office of Māori guidance) at Te Kura Matatini ki Otago, and mana whenua (local Indigenous people), the BCA programme development team engaged in a series of hui (meetings) to discuss the hospitality sector's traditional workplace cultures and how an alternative pedagogic framework might contribute to the rebuilding of a sustainable future. Through various hui, the discussions finally centred around the following statement: "How can the BCA programme develop a culturally responsive pedagogy which helps facilitate a sustainable future for the chefs of Aotearoa?"

As part of the developmental discussions, manaakitaka was identified as a critical concept which differentiated Aotearoa's practice of hospitality from others internationally. Due to the multidimensional nature of te ao Māori, context defines how manaakitaka is interpreted and practiced (Mead, 2016). However, within the field of hospitality, manaakitaka is widely understood as the act of care towards others; ironically, something which has not always been practiced within the professional kitchen. Furthermore, due to the holistic, integrated, and multidimensional nature of te ao Māori, manaakitaka cannot be practiced without the presence of a genuine relationship and a sense of responsibility towards others. Therefore, expressing an act of whānaukataka (meaningful relationships) and kotahitaka (collective bonding and responsibility) need also be enacted if one wishes to enact manakitanga towards others.

The development team explored how the concepts of manaakitaka, whānaukataka, and kotahitaka could become the tūāpapa (foundational) principles within the programme's pedagogy. As part of the process, the team discussed the ways in which these values presented a counter cultural perspective to the traditional cultural norms of aggression and exploitation. The following table highlights these differences in these cultural perspectives.

Differences in Kitchen Cultural Perspectives

Culture of Manaakitaka, Whānaukataka, and Kotahitaka	Culture of Aggression and Exploitation
Manaakitaka is about upholding the integrity of self and others through the provision of care .	Aggressive and exploitative kitchen cultures promote individualism and are intended to protect self-interest .
Whānaukataka is about building respectful and meaningful relationships and recreating spaces to share experiences and perspectives .	Relationships are transactional and within these relationships there are winners and losers .
Kotahitaka is premised upon collective purpose and responsibility and embraces the diversity of the individual as a collective strength .	Individuals perform a function within a structure. If individuals do not perform, they are replaced by another functional individual.

Table 1. Differences in Kitchen Cultural Perspectives

Beyond the pedagogy of the classroom, it was deemed that the adoption of these values within kaiako (lecturer) teaching practice allowed them to explicitly role model the professional behaviours expected of a contemporary chef. In this way, kaiako were not just teaching taura the technical knowledge required to practice as a chef; rather, they would support technical knowledge with learning activities to facilitate taura understandings of how to positively interact with others and the environment they operate within.

Bicultural Framework in Action

The following are examples of the framework's values and how they are implemented into the pedagogy and curriculum design of the programme.

Bicultural Values	Pedagogic Strategies
<p>Manaakitaka is about upholding the integrity of self and others through the provision of care.</p>	<p>Tauira and Kaiako get to know each other’s cultural perspectives and personal aspirations early within the programme. Tauira then bring these cultures and aspirations into their project work.</p> <p>Understanding the application of manaakitaka within different culinary contexts is developed through project work, which requires tauira to design dishes, systems, and experiences which meet the needs of others. This involves tauira understanding the mana of the place, the people, knowledge, and kai within those contexts.</p> <p>Reflective exercises and assignments allow tauira to interpret and define how manaakitaka is embedded and enacted within their culinary practice and their wider community of practice.</p> <p>Tauira and kaiako wellbeing is central to the planning and design of curriculum, through the integration of self-care and effective learning strategies, and the programme’s holistic assessment philosophy.</p>
<p>Whānaukataka is about building respectful and meaningful relationships and recreating spaces to share experiences and perspectives.</p>	<p>Culturally safe spaces are created within the programme structure where tauira share openly with others their perspectives and learnings without fear of judgement or ridicule.</p> <p>Relationships of trust are nurtured so that tauira feel safe seeking feedback and asking for help.</p> <p>Projects are designed so that tauira are introduced to community partners and are exposed to the importance of relationship building (networking) within the culinary community.</p> <p>Projects are managed in a way that ensures tauira can deliver realistic outcomes that continue to build positive relationships with the culinary community.</p> <p>Reflective exercises and assignments allow tauira to define how whānaukataka is embedded and enacted within their culinary practice.</p>
<p>Kotahitaka is premised upon collective purpose and responsibility and embraces the diversity of the individual as a collective strength.</p>	<p>A community of practice is established at the beginning of the degree, through shared learning spaces (both face to face and online) within which ako is highly valued.</p> <p>Tauira regularly collaborate with the wider BCA community, working within teams across cohorts and receiving/giving feedback to achieve collective outcomes.</p> <p>All tauira project work culminates in a collaborative event with community partners. While tauira may complete individual work, it is required to be modified and adapted so that it supports the kaupapa of the collective.</p> <p>Tauira are acknowledged for their overall contribution to the collective team, as opposed to being rewarded for individual actions.</p>

Table 2. Bicultural Framework in Action

Beyond implementing these values into the pedagogy of the classroom, the programme includes papers at each year of the

programme where these values are explicitly taught. In year one, the course Manaakitaka for Kai requires taura to apply the principles of manaakitaka, whānaukataka, and kotahitaka to design and implement a food experience for manuhiri (guests). Within this course, students are assessed on their application of these values to create a food and beverage experience for invited guests. Through this approach, there is a shift in attention from the food that the taura produce to how the taura embrace manaakitaka, whānaukataka, and kotahitaka within their dish development and implementation processes to uphold the mana of the cohort and their guests.

In year two, taura work with community partners to design new food products or service offerings. Within these projects, taura explore the ways in which manaakitaka, whānaukataka, and kotahitaka are practiced in the building and maintaining of professional relationships, and how these relationships create a positive impact within the wider food landscape.

In year three, reflective activities allow taura to interpret and define how manaakitaka, whānaukataka, and kotahitaka are embedded within their own and others' culinary practice. Within the course Hauora (wellbeing) in the Culinary Workplace, taura frame their reflective insights around their interactions of manaakitaka, whānaukataka, and kotahitaka with other culinary professionals, and how the interaction of these values impacts the kitchen's hauora.

Conclusion: A Return to Manaakitaka

As chefs in Aotearoa New Zealand, we have unconsciously wandered in an identity wilderness, not really knowing who we are, often performing as the gastronomic Other. As the gastronomic Other, we have performed the traditions of Europe, which has influenced not only our dishes but carved deep into our psyche the ideologies which surround them (Woodhouse, 2021). The pandemic has provided us with the opportunity to stop, reflect and reset our understanding of self. As we move into a post-COVID landscape we now have the opportunity to acknowledge and embrace our unique perspective and place within the culinary world. Inherent within our uniqueness is the cultural gift of te ao Māori, a perspective which allows the values of manaakitaka, whānaukataka, and kotahitaka to guide our decisions and personal interactions. As culinary educators, it is our inherent belief that through embedding these bicultural values within our pedagogic practice, we have the ability to

change the mauri (life force) and hauora within our working environments.

Māori often express the following whakatauki (proverb) when faced with making decisions in life, Kia whakatōmuri te haere whakamua 'I walk backwards into the future with my eyes fixed on my past'. This whakatauki acknowledges that for Māori, many of the questions we have about our future can be answered by connecting with our past. In the case of the future of culinary arts, we believe that reconnection with how we have always viewed our relationships with people and place within Aotearoa provides us with an answer for our future.

Conflict of Interest

There are no known conflicts of interest in this article.

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References

- Burrow, R., Smith, J., & Yakinthou, C. (2015). 'Yes Chef': life at the vanguard of culinary excellence. *Work, employment and society*, 29(4), 673-681.
- Cole, M., Stuart, M., Hardy, K., & Spencer, D. (2022). Wage Theft and the Struggle over the Working Day in Hospitality Work: A Typology of Unpaid Labour-Time. Retrieved from <https://eprints.whiterose.ac.uk/186163/3/Wage%20Theft%20-%20WES%20revision%20Two%20Final.pdf>. (0950-0170). Retrieved 12th August 2022, from University of Leeds <https://eprints.whiterose.ac.uk/186163/3/Wage%20Theft%20-%20WES%20revision%20Two%20Final.pdf>
- Gill, M. J., & Burrow, R. (2018). The function of fear in institutional maintenance: Feeling frightened as an essential ingredient in haute cuisine. *Organization Studies*, 39(4), 445-465.
- Gong, P. (2017). *Employees' experience of workplace bullying:*

- A study of Chinese workers in the New Zealand hospitality industry.* Auckland University of Technology.
- Graham, T. (Writer). (1999). Boiling Point. In D. Nath (Producer), *Episode 3*. London Weekend Television: Channel 4.
- Hendry-Tennent, I. (2022). Government defends response to severe staff shortages as hospitality business warns industry in dire straits. Retrieved from <https://www.newshub.co.nz/home/politics/2022/07/government-defends-response-to-severe-staff-shortages-as-hospitality-business-warns-industry-in-dire-straits.html>
- Kauffman, J. (2019). Does Staging Even Matter Anymore? Retrieved from <https://www.eater.com/young-guns-rising-stars/2019/11/7/20931221/pros-and-cons-of-staging-in-fine-dining-restaurants>
- Mead, H. M. (2016). *Tikanga Maori (Revised Edition): Living By Maori Values*. Wellington, New Zealand: Huia publishers.
- Palmer, C., Cooper, J., & Burns, P. (2010). Culture, identity, and belonging in the “culinary underbelly”. *International Journal of Culture, Tourism and Hospitality Research*, 4(4), 311-326.
- Robinson, R. N., & Brenner, M. L. (2021). Wage theft in professional kitchens: Conned or complicit? *Hospitality & Society*, 11(1), 87-106.
- Smith, L. (2021). Sustainable tourism: business or experience? Retrieved from <https://www.odt.co.nz/business/sustainable-tourism-business-or-experience>
- Te Pūkenga. (2022). Reimagining Vocational Education. Retrieved from <https://xn--tepkenga-szb.ac.nz/about-us/>
- Tourism Industry Aotearoa. (2022, July 20). Tourism 2025 & Beyond. Retrieved from <https://www.tia.org.nz/tourism-2025>
- Williamson, D. (2017). Too close to servility? Why is hospitality in New Zealand still a ‘Cinderella’ industry? *Hospitality & Society*, 7(2), 203-209.
- Williamson, D., Rasmussen, E., & Palao, C. (2022). *Voices from the front line*. Retrieved from <https://news.aut.ac.nz:https://news.aut.ac.nz/aut-news-site/Voices-From-The-Front-Line.pdf>
- Woodhouse, A. (2021). Torn Identities: A Kāi Tahu pūrākau of whiteness. (Doctor of Professional Practice). Otago Polytechnic, Otago Polytechnic. Retrieved from <https://www.op.ac.nz/industry-and-research/research/postgraduate-studies/opres-theses/professional-practice-theses/woodhouse-dpp/>

Building Training Methodology: Preparing Invigilators for Active, In-person, Exam Management

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***Innovation Spotlights** extremely brief contributions that highlight an innovative teaching practice, approach, or tool, and provide accompanying evidence that speaks to the effectiveness of the innovation.

Abstract

This study assesses effective training methods that support in-person, post-graduate, exam invigilators to build awareness of institutional policies as well as heighten their comfort and confidence with invigilating in the exam setting. Vigilant, active invigilators are considered effective in reducing student cheating behaviour on exams (Alabi, 2014; Attoh Odongo et al., 2021; Feng & Ouyang, 2021; Siniver, 2013). This study followed 26 exam invigilators of varying experience through pre-training, training, and post-exam invigilation. Invigilators completed an online survey prior to participating in an in-person, half-day training session, self-identifying existing levels of experience, policy knowledge, and comfort/confidence in the exam setting in numerous situations. Upon completion of an in-person training session in a group setting, they completed a second online survey, which showed overall improvement. Invigilators were then assigned a live, in-person invigilation shift and following this, completed a third online survey. The study concludes that the training methods implemented foster confident and capable exam invigilators who support students' compliance with academic integrity. With the shift to online testing during the COVID-19 pandemic, consideration needs to be given as to whether in-person invigilators retain the knowledge when they experience lengthy lapses of employment, and how their learned skills may be transferable to the online environment.

Introduction

Research indicates that post-secondary students committing acts of academic dishonesty, e.g., cheating in physical testing environments, is widespread and increasing in prevalence (Fendler & Godbey, 2016; Gurung et al., 2012; Levy & Rakovski, 2006; Shon, 2006; Siniver, 2013). Conservative estimates are that one in every five North American post-secondary students has committed some form of exam cheating (McCabe, 2005); the rate could be as high as one in two (Fendler & Godbey, 2016). According to Christensen Hughes and McCabe (2006), cheating in post-secondary environments across Canada may constitute “a serious problem” (p. 18). This culture of cheating has immense implications for what represents students' actual knowledge, and calls into question the credibility

of faculty, credentials awarded by institutions, and the risk of carrying cheating behaviour beyond the educational institution and into the marketplace (Happel & Jennings, 2008). The research team aimed to identify and build an effective training protocol for in-person exam invigilators in post-graduate college examinations in specialty nursing courses with the goal of standardizing an active invigilation approach.

Role of Invigilators

Examination serves multiple purposes, including measuring learners' abilities, scholarship obtainment, and determining whether course-learning objectives are met (Alabi, 2014). Invigilators are considered key to maintaining test security; they are tasked with thwarting student cheating behaviours (Mafa & Gudhlanga, 2012; Stonecypher & Wilson, 2014). Shon (2006) reinforces that cheating occurs when invigilators are inattentive, but suggests that even active invigilators must heighten their awareness during exam management. The literature describes active invigilation as circulating the room, monitoring student behaviour, and maintaining a controlled environment, in turn standardizing the student experience. It also establishes "the extent of the knowledge or skill acquired" (Alabi, 2014, p. 59), and yields benefit to all educational stakeholders (Alabi, 2014). Ray et al. (2018) concur. Viewed through the lens of pharmacy education, they emphasize the need for invigilators to receive training that is targeted to the seriousness of their tasks: how to manage misconduct and deal with "other emergent situations" (p. 1129). Minott (2019) offers that the use of reflective practice, such as journaling, could help invigilators to build on required skills such as adaptability. Ray et al. (2018) recommend having a faculty member available to aid with supervision (the faculty member should not be associated with the material in fairness to all students writing the exam). Ray et al. further propose determining a reasonable invigilator-to-student ratio, e.g., 1:25. All said, there is a dearth of both quantitative and qualitative research identifying optimal forms of invigilator training. Case in point, Minott (2019) states that there is a "lack of attention" (p. 97) in the literature devoted to the responsibilities, roles, and professional development of invigilators; having searched 65 databases using related key terms for the years 2000 through 2019, the author found only "28 'hits'" (p. 97). In terms of both distance and online education, the research suggests physical exam invigilation as the best system to assure both integrity

of the examination process and cost-efficiency in exam management (Pittman, 2015).

Method

A self-reporting, survey approach to inquiry was used to measure invigilators' perceptions of confidence with upholding the Test & Exam Policy, and application and adherence to academic integrity as it applies to this institution (current as of 2017/2018). Additionally, it measured comfort with vocabulary used in the examination setting. Surveys were administered electronically at three points in time via Survey Monkey.

Research Question

The study aimed to address the research question: How effective is in-person, scenario-based, case analysis training in preparing invigilators for effective in-person exam management in the post-graduate, college environment? This quality assurance study probed the need for the review of existing institutional exam testing procedures, with the aim of proposing improvements to training methods.

Training Protocol

After having trialed several different exam invigilator training methods prior to this study, the research team constructed both pre- and post-training surveys and short answer questions to evaluate the effectiveness of the following proposed educational intervention: an in-person, scenario-based, case analysis training methodology aimed at preparing invigilators for active in-person exam management in the post-graduate, specialty nursing environment.

Participants received a half-day, in-person, educational session led by the principal investigator. Participants were given a training workbook, engaged in activities related to exam monitoring (i.e., logistics of room set up, execution of role duties) and participated in scenario-based discussions inspired by a series of videos (see Appendix for video link). Active learning strategies were based on literature findings that recommend using active versus passive invigilation techniques to manage the exam environment and uphold academic integrity.

Invigilators began with a pre-training, online survey that posed a variety of closed-ended questions on existing invigilating experience, knowledge and understanding of the institutional Test & Exam Policy and academic integrity tenets, and confidence to apply their skills when confronted

with both conventional and unconventional scenarios that may transpire in a live exam setting.

Study Design

The survey approach was considered appropriate to bridge the gaps found: (a) within the literature based on both active versus passive invigilation, and (b) in invigilators' classroom experiences.

Multiple-choice questions assessed knowledge about invigilating experience and test and exam policies. Likert-scale questions enabled participants to self-rate their level of knowledge over the study duration, as well as their confidence to actively invigilate. Open, short-answer questions asked participants what mechanisms could be put into place to increase their comfort and confidence levels to invigilate. Furthermore, a case study scenario was provided to participants to test their knowledge and its application. The quantitative surveys were administered pre- and post-training, and post-invigilation. The qualitative, short answer questions were posed at post-training and post-invigilation periods. The case study question was posed in the post-invigilation survey. Each online survey took participants about 20 minutes to complete. Survey data was collected over two cohorts.

Participants

This study enrolled 26 voluntary staff members (faculty and support staff), including both experienced and newly recruited exam invigilators, with the pragmatic goal of applying learned skills in near-future invigilation shifts, i.e., overseeing active classroom exam management. Informed consent was obtained; research participation was voluntary. Participants were given a \$25.00 CAD gift certificate upon completion of all three online surveys. The study took place at a large polytechnic college in an urban area in Ontario over the 2017/2018 academic year.

Data Analysis

Data analysis was conducted in Excel. Quantitative measures examined invigilator knowledge of the Test & Exam Policy. Qualitative responses to case studies were evaluated using a scoring rubric. Study participants were assigned a unique identification number to ensure confidentiality.

Results

Knowledge of Institutional Test & Exam Policy

Knowledge of the Test & Exam Policy varied among the participants, but showed overall improvement with the six points surveyed over time: scenarios involving cell phones, washroom breaks, water bottles, watches, scarves, and leaving the exam room early. Additionally, when comparing the post-training and post-invigilating surveys to the initial results, most participants had not thoroughly read the policy after the live training session; they claimed that they had read the policy only after completing an actual invigilation shift. In response to the case study scenario, eight participants replied. All eight respondents identified seeking further departmental support and seven out of eight respondents identified providing the students with a reminder of the policy as successful strategies in managing a late arrival. Results are charted in [Figure 1](#) and the case study scenario appears in the survey questions presented in the Appendix.

Invigilator Perceptions – Application & Adherence to Academic Integrity

Prior to the live training session, most of the participants believed they had a general understanding of the institution's academic integrity policy, with a few of them indicating they had an extensive understanding. Post-training and post-invigilation, most of the participants indicated they had an extensive understanding of academic integrity. Results are charted in [Figure 2](#).

Invigilator Perceptions – Confidence with Test & Exam Policy

Prior to the live training session, there were some participants who self-identified as not at all confident or not confident regarding the Test & Exam Policy. Post-training and post-invigilation, all participants shifted into the neutral, confident, and extremely confident categories. Results are charted in [Figure 3](#).

Invigilator Perceptions – Comfort with Vocabulary

Prior to the live training session, participants were asked, "How comfortable would you feel right now having a conversation with a student and informing them that due to their late arrival to the exam (regardless of any reason they may present) that they cannot enter the exam room at

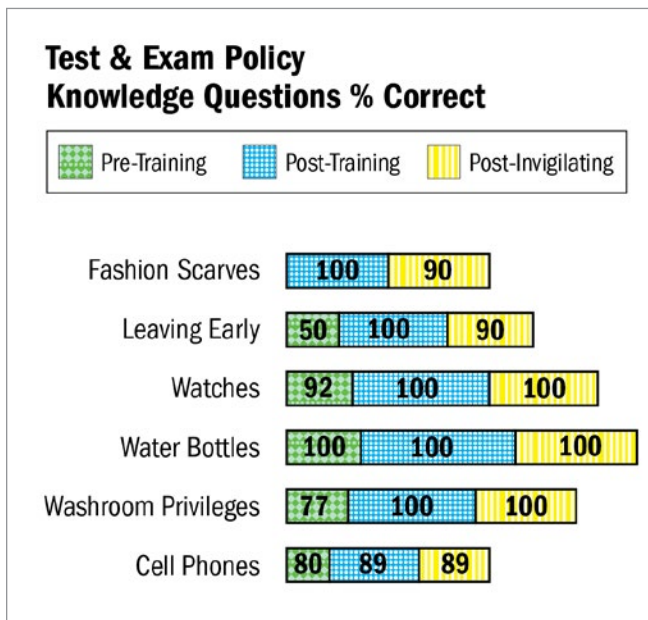


Figure 1. Test & Exam Policy Knowledge Questions % Correct
 Prior to the live training session, there was a relatively balanced number of individuals across all categories. This could be related to the fact that there were two cohorts of people who completed the initial survey. Post-training, most participants had not thoroughly read the policy after the training session. Post- invigilation, they claimed that they had read the policy only after completing an actual invigilation session.

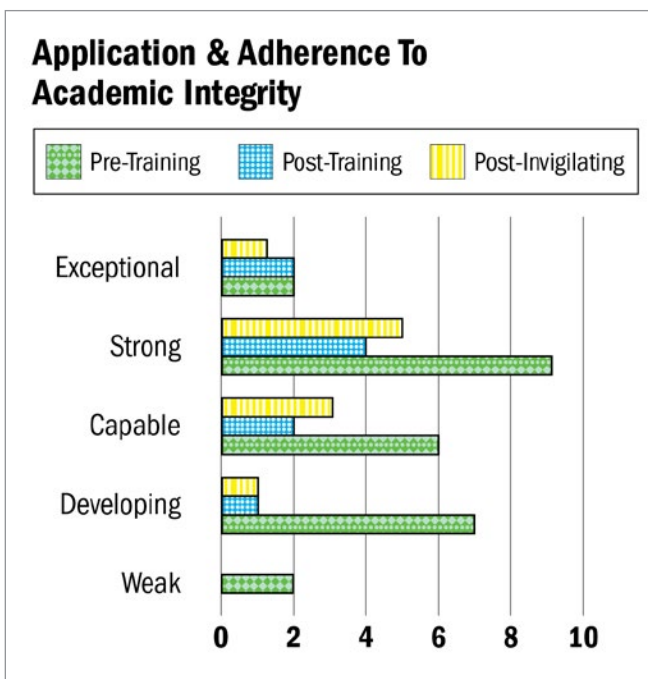


Figure 2. Application & Adherence To Academic Integrity

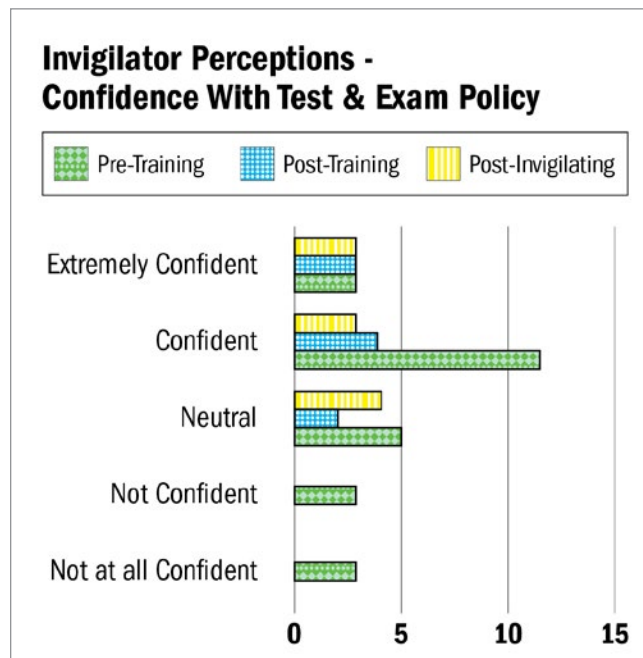


Figure 3. Invigilator Perceptions – Confidence with Test & Exam Policy

the current time?” Some participants self-identified as very uncomfortable or uncomfortable. Post-training and post- invigilation, participants shifted into the neutral, confident, and extremely confident categories regarding their comfort with vocabulary common to exam invigilators. Results are charted in Figure 4.

Invigilator Self-identification of Methods to Develop Comfort and Confidence

In response to the question, “What would help you to be more confident/comfortable in your role as an exam invigilator?” participants self-identified more experience/ more practice.

Invigilator Self-identification of Unclear Situations

Three invigilators responded to an open-ended question asking them to identify any situations that came up during their invigilation shift for which they felt unsure of how to respond. Two wrote about cases of students viewing the papers and answers of other students nearby; with no extra seating available to move students, the invigilators wondered what to do aside from watching closely and reporting their observations. One invigilator commented on a student having only an unacceptable work identification card on the desk, as they had left the acceptable student identification card and/or acceptable government-issued identification in

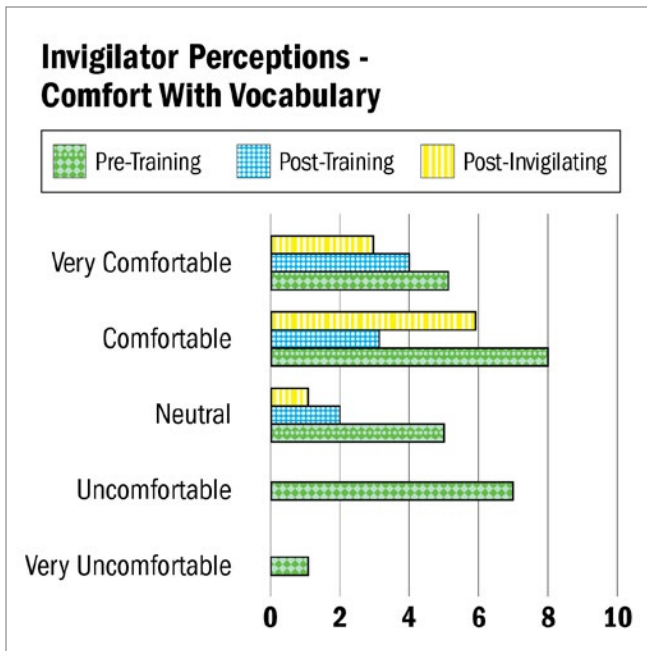


Figure 4. Invigilator Perceptions – Comfort With Vocabulary

a backpack in the designated area; the invigilator wanted guidance on what to do since accessing backpacks is not allowed in the exam room. The question prompt appears in the survey questions presented in the Appendix.

Discussion

Based on literature recommendations regarding active invigilation, and the principal investigator’s invigilation experience, an in-person, educational intervention was designed using active learning strategies for in-person management of post-graduate nursing exams. The recruitment sample consisted of 26 study participants, all of whom had varying degrees of invigilation experience. The participants demonstrated increased confidence (self-assessment), comfort (self-assessment), and knowledge of both academic integrity processes and the Test & Exam Policy after completion of all trainings (and having worked through scenario-based case analysis questions). To support retention, the active learning strategies included online problem-based scenarios to serve as a job-aid and review tool for invigilators; the objective was to provide: (a) formative feedback to invigilators, (b) rationale for decisions, (c) recommended actions to the various authentic predicaments which arise during exam invigilation, and (d) a reference tool.

Government-imposed lockdowns during COVID-19 have

prompted institutions globally to turn to digital learning, universal design, and remote exam invigilation services to maintain course offerings and continuity; however, remote exam invigilation varies in both methodology (D’Souza & Siedfeldt, 2017) and, in some fields, lacks standards (Gary, 2020). The in-person training intervention discussed in this study (consisting of active learning strategies) was conducted prior to the COVID-19 pandemic. To be clear, the endeavour was to develop standards that could be used in physical exam environments; the study was not designed for online exam management. There is an assumption in the literature that physically separating students from invigilators—as occurs in online examinations—may only exacerbate student cheating behaviour, as well as raise student levels of anxiety (Parker et al., 2021).

There also appears to be debate in the literature as to the ongoing merit of creating and administering invigilated versus non-invigilated exams while institutions continue to wrestle with student cheating behaviour (Harris et al., 2019). Killam et al. (2021) suggest educators in nursing can start by incorporating slight changes in their assessment strategies based on critical care pedagogy (CCP) and universal design for learning (UDL) with the aim of reducing cheating by bridging the gap between theory and practice, e.g., talking to students about why academic integrity is important and establishing trusting relationships. From there, educators can craft meaningful and measurable learning outcomes that support students, promote critical thought, and build knowledge and mastery (Killam et al., 2021). However, there remains a question as to whether the implementation of authentic assessment is feasible due to its “resource intensive nature” (Birks et al., 2020, p. 13).

Limitations

Of note, while some invigilators received timely scheduling of their invigilation shift (within a month of their training date), others experienced a lengthy delay. Due to fixed exam dates not matching invigilator availability, as well as one weather-related college closure, and the need to reschedule one training date, the intended plan to train and invigilate within a few weeks was not possible for some participants.

Future Directions

Should in-person, post-graduate nursing examinations resume post-pandemic, the research team would be interested in measuring learning retention of the invigilators who previously participated in the research study. Research

suggests that learners retain “90 percent of what they *Do* as they perform a task” (Anderson, n.d.). The research team could measure retention through the administration of a pre-refresher test, a refresher module, and post-refresher test. If required, future training could include other learning strategies that promote retention, e.g., peer-to-peer teaching (Tullis & Goldstone, 2020) as well as reflection through journaling (Minott, 2019). As observed in the knowledge of the Test & Exam Policy results, some participants self-identified the importance of reading the Test & Exam Policy only after their invigilation shift, demonstrating value in reflection as a supportive learning tool worthy of future investigation. Further, as some literature recommends ongoing investigation of the relationship between academic integrity and the online learning environment (Reedy et al., 2021), the research team is interested in whether (and what) knowledge acquired by invigilators trained for the in-person environment is transferable to the online environment and/or what skill set is required for invigilating in the online learning environment. Future research must also explore how the in-person invigilation landscape has changed since COVID-19.

Lastly, in a broader context, if the trend toward online examination persists post-pandemic, should academic integrity research focus on specific student cheating behaviours, e.g., collaboration, in non-invigilated online testing environments (Vasquez et al., 2021) or should it further probe the extent to which online invigilation curtails cheating in online exams (Dendir & Maxwell, 2020)? Current literature suggests some degree of success in “authenticating who the test-taker is” (Dawson, n.d., p. 3). Alternatively, does the approach require, as Reedy et al. (2021) suggest, studying a wider convergence of exam design, invigilation processes, and technological capability?

Impact

The assumption that invigilators are reading policy does not result in knowledgeable, confident, and comfortable exam invigilators. To support academic integrity among students in the in-person exam setting, we must support invigilators. A team of active, stringent, and capable invigilators who know what to do and how to respond in a variety of scenarios is desired. The implemented training methodology showed self-identified improvement in knowledge and understanding. While it did not measure engagement, the research team observed that invigilators were active participants in both the training sessions and the online surveys; they asked questions, shared anecdotes, and demonstrated a strong

desire to collaborate and support each other as a team. It remains the goal of the research team to foster open dialogue among invigilators, to provide opportunities for skills review training, and to continue to build upon this foundation to uphold integrity in the exam setting.

Conclusion

The research team contends that their approach to in-person invigilator training demonstrates promise in developing informed, comfortable, confident, and capable invigilators who, in an academically rigorous manner, through keen observation, adherence to policy, and cooperation with procedure, can support student compliance with academic integrity.

Conflict of Interest

The authors declare that no conflict of interest or monetary interests exist.

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References

- Alabi, A. O. (2014). Effective invigilation as a panacea for examination malpractices among students of tertiary institutions in Nigeria (Version 1). *Global Journal of Human-Social Science. A: Arts & Humanities – Psychology*, 14(2), 58-62.
- Anderson, H. M. (n.d.). *Dale's cone of experience*. https://www.queensu.ca/teachingandlearning/modules/active/documents/Dales_Cone_of_Experience_summary.pdf
- Attoh Odongo, D., Agyemang, E., & Boulard Forkuor, J. (2021). Innovative approaches to cheating: An exploration of examination cheating techniques among tertiary students. *Education Research International*, 1-7. <https://doi.org/10.1155/2021/6639429>
- Birks, M., Mills, J., Allen, S., & Tee, S. (2020). Managing the mutations: Academic misconduct in Australia, New Zealand, and the UK. *International Journal for Educational Integrity*, 16(6), 1-15. <https://doi.org/10.1007/s40979-020-00055-5>
- Christensen Hughes, J. M., & McCabe, D. L. (2006). Academic misconduct within higher education in Canada. *Canadian Journal of Higher Education*, 36(2), 1-21.
- Dawson, P. (n.d.). *Strategies for using online invigilated exams*. TEQSA (Tertiary Education Quality and Standards Agency). <https://www.teqsa.gov.au/sites/default/files/2022-10/strategies-for-using-online-invigilated-exams.pdf>
- Dendir, S., & Maxwell, R. S. (2020). Cheating in online courses: Evidence from online proctoring. *Computers in Human Behavior Reports*, 2, 1-10. <https://doi.org/10.1016/j.chbr.2020.100033>
- D'Souza, K. A., & Siegfeldt, D. V. (2017). A conceptual framework for detecting cheating in online and take-home exams. *Journal of Innovative Education*, 15(4), 370-391. <https://doi.org/10.1111/dsj.12140>
- Fendler, R. J., & Godbey, J. M. (2016). Cheaters should never win: Eliminating the benefits of cheating. *Journal of Academic Ethics*, 14, 71-85. <https://doi.org/10.1007/s10805-015-9240-8>
- Feng, H., & Ouyang, W. (2021). Analysis on the problems of college students cheating in examinations from the perspective of game theory. *Advances in Social Science, Education and Humanities Research*, 598. Proceedings of the 7th International Conference on Social Science and Higher Education (ICCSHE 2021).
- Gary, C. J. (2020). Is in-person dental education in danger of disappearing? [Editorial]. *The New York State Dental Journal* (Aug/Sept. 2020), 1-4.
- Gurung, R. A. R., Wilhelm, T. M., & Filz, T. (2012). Optimizing honor codes for online exam administration. *Ethics & Behavior*, 22(2), 158-162. <https://doi.org/10.1080/10508422.2011.641836>
- Happel, S. K., & Jennings, M. M. (2008). An economic analysis of academic dishonesty and its deterrence in higher education. *Journal of Legal Studies Education*, 25(2), 183-214. <https://doi.org/10.1111/j.1744-1722.2008.00051.x>
- Harris, L., Harrison, D., McNally, D., & Ford, C. (2019). Academic integrity in an online culture: Do McCabe's findings hold true for online, adult learners? *Journal of Academic Ethics*, 18(4), 419-434. <https://doi.org/10.1007/s10805-019-09335-3>
- HumberCTL. (n.d.). *Playlists*. [YouTube channel]. Retrieved December 6, 2022, from <https://www.youtube.com/playlist?list=PLVZd4Ttp3K9XVhZ75WJldqmx7Eh1h5Zbi>
- Humber College. (2022). *Humber admission requirements and academic regulations: Section 17.0 Academic Misconduct 2017-2018*. <https://academic-regulations.humber.ca/2017-2018/17.0-ACADEMIC-MISCONDUCT>
- Humber College. (2017, June). *Test & exam policy*. School of Health Sciences Humber ITAL.
- Killam, L. A., Luctkar-Flude, M., Brune, S., & Camargo-Plazas, P. (2021). Redefining cheating on written exams: A shift toward authentic assessment to promote universal design for learning in the context of critical caring pedagogy. *Advances in Nursing Science*, 1-17. <https://doi.org/10.1097/ANS.0000000000000407>
- Levy, E. S., Rakovski, C. C. (2006). Academic dishonesty: A zero tolerance professor and student registration choices. *Research in Higher Education*, 47(6), 735-754. <https://doi.org/10.1007/s11162-006-9013-8>
- Mafa, O., & Gudhlanga, E. S. (2012). Examination management as a way of achieving quality assurance in ODLE institutions. *Turkish Online Journal of Distance Education*, 13(2), 147-157.
- McCabe, D. L. (2005). Cheating among college and university students: A North American perspective. *International Journal for Educational Integrity*, 1(1), 1-11.
- Minott, M. (2019). Building work-related knowledge about examination invigilation through reflective journaling.

Journal of Workplace Learning, 32(2), 97-107. <https://doi.org/10.1108/JWL-06-2019-0068>

- Parker, A. M., Watson, E., Dyck, N., & Carey, J. P. (2021, June 20-23). *Traditional versus open-book exams in remote course delivery: A narrative review of the literature* [Conference session]. Canadian Engineering Education Association Conference, Charlottetown, PEI, Canada. <https://doi.org/10.24908/pceea.vi0.14845>
- Pittman, V. (2015). Perspectives in AE – First system, best system: The proctored examination. *New Horizons in Adult Education & Human Resource Development*, 27(1), 44-50. <https://doi.org/10.1002/nha3.20093>
- Ray, M. E., Daugherty, K. K., Lebovitz, L., Rudolph, M. J., Shuford, V. P., & DiVall, M. V. (2018). Best practices on examination construction, administration, and feedback [Editorial]. *American Journal of Pharmaceutical Education*, 82(10), 1127-1132
- Reedy, A., Pfitzner, D., Rook, L., & Ellis, L. (2021). Responding to the COVID-19 emergency: Student and academic staff perceptions of academic integrity in the transition to online exams at three Australian universities. *International Journal for Educational Integrity*, 17(9), 1-32. <https://doi.org/10.1007/s40979-021-00075-9>
- Shon, P. C. H. (2006). How college students cheat on in-class examinations: Creativity, strain, and techniques of innovation. *Plagiarism: Cross-Disciplinary Studies in Plagiarism, Fabrication, and Falsification*, 130-148.
- Siniver, E. (2013). Cheating on exams: The case of Israeli students. *College Student Journal*, 47(4), 593-604.
- Stonecypher, K., & Wilson, P. (2014). Academic policies and practices to deter cheating in nursing education. *Nursing Education Perspectives*, 35(3), 167-179. <https://doi.org/10.5480/12-1028.1>
- Tullis, J. G. & Goldstone, R. L. (2020). Why does peer instruction benefit student learning? *Cognitive Research: Principles and Implications*, 5(15), 1-12. <https://doi.org/10.1186/s41235-020-00218-5>
- Vasquez, J. J., Chiang, E. P., & Sarmiento-Barbieri, I. (2021). Can we stay one step ahead of cheaters? A field experiment in proctoring online open book exams. *Journal of Behavioral and Experimental Economics*, 90, 1-9. <https://doi.org/10.1016/j.socec.2020.101653>

Appendix

Universal Survey Questions on all Three Surveys (pre-training, post-training, post-invigilating)

Instructions:

This survey is anonymous and voluntary. Your name will be coded into an ID number by a third-party Research Assistant. Researchers will be given data only; no identifier will be shared. To protect the integrity of the survey, it is essential that you answer the questions honestly and independently, without referring to any source or guide to find the answers to any given questions. It is okay if you don't know a specific answer; this has no impact on your role or employment status. Thank you for your cooperation in protecting the integrity of the research data collected.

For each of the following questions, select the most appropriate answer to reflect your current knowledge and understanding.

1. Tell us about your invigilating experience to date:
 - a) I have no experience invigilating student exams.
 - b) I have minimal experience invigilating student exams.
 - c) I have some experience invigilating student exams.
 - d) I have extensive experience invigilating student exams.
2. Tell us about any invigilator training you have received to date:
 - a) I have never participated in any formal invigilator training.
 - b) I have participated in invigilator training session(s) with other institutions.
 - c) I have participated in invigilator training session(s) with this college.
3. Tell us about your current understanding of academic integrity.
 - a) I have no understanding of academic integrity.
 - b) I have minimal understanding of academic integrity as it applies to education.
 - c) I have some general understanding of academic integrity as it applies to post-secondary education.
 - d) I have extensive understanding of academic integrity as it applies to this college (AI (Academic

Integrity) pledge, AI pledge ceremony, AI videos, AI social media campaign).

4. Tell us about your knowledge of the school's Test and Exam Policy to date:
 - a) I have never seen the policy.
 - b) The policy was provided to me, but I have not had time to read it yet.
 - c) I have glanced at the policy but have not read everything in detail.
 - d) I have read the policy thoroughly.

5. With the knowledge that you have to date about the school's Test and Exam Policy, please respond to each of the following scenarios:
 - a) Students may bring personal cell phones into the exam room.

True / False / I don't know.

Explanation:
 - b) Students may sign out and in once for washroom privileges.

True / False / I don't know.

Explanation:
 - c) Students may bring transparent water bottles into the exam room.

True / False / I don't know.

Explanation:

6. A student raises their hand and tells you that there is a glare in the room and they cannot see the clock or projected time on the screen/whiteboard. They want to use their personal watch to keep an eye on the time. May the student wear their personal watch or place it discreetly on their desk? YES / NO

7. A student has completed their exam and wishes to leave early. Twelve minutes testing time remains. May the student quietly and discretely collect their belongings and leave the room? YES / NO

8. How confident would you feel with the exam process and upholding the Test & Exam Policy right now if you were to walk into an exam room of 35-70 post-graduate students for the purpose of invigilating a final exam?

Not at all confident / Not confident / Neutral / Confident / Extremely confident

9. How comfortable would you feel right now having a conversation with a student and informing them that due to their late arrival to the exam (regardless of any reason they may present) that they cannot enter the exam room at the current time?

Very uncomfortable / Uncomfortable / Neutral / Comfortable / Very comfortable

10. Please rate your current skills in applying and adhering to academic integrity policies?

Weak / Developing / Capable / Strong / Exceptional

Additional Survey Questions on both Surveys 2 (post-training) and 3 (post-invigilating)

1. What would help you to be more confident and comfortable in your role as invigilator?
2. I feel that this training has prepared me to do my job well.

Strongly disagree / Disagree / Neither agree nor disagree / Agree / Strongly agree

Additional Survey Questions unique to Survey 3 (post-invigilating)

1. Please note any situation for which the training did not prepare you.
2. Imagine the following scenario: A student arrives 35 minutes late. She arrives at 9:35 a.m. for a 9:00 a.m. exam start. She was in a minor car accident on the way to the college and shares this information. She displays no immediate signs of injury. She confirms that she is fine and does not need to go and see a doctor. She explains that she is late because she took the time to exchange information with the driver of the other car. She wants to write her exam with her group. She further explains that she has arranged childcare for her two children at this time and that she has a night work shift starting at 11:00 p.m. She wants to write her exam now so she can go home and rest before her work shift. Coincidentally, one student has just left the exam room. What would you do in this situation to help this student?

3. The previously attended invigilator training session provided me with a solid understanding of the school's Test and Exam Policy.

Strongly disagree / Disagree / Neither agree nor disagree / Agree / Strongly agree

4. This previously attended invigilator training session provided me with a solid understanding of academic integrity.

Strongly disagree / Disagree / Neither agree nor disagree / Agree / Strongly agree

5. Please note any situation for which you still felt unsure of or did not know what to do.

6. Please note any challenge you faced; what did you do? Was your action effective?

7. Please provide any additional feedback concerning your training and/or your invigilating experience that you would like to share as well as anything you recommend adding or removing from the training curriculum.

Link to Scenario-Based Invigilator Training Videos

[Invigilator Training Videos](https://www.youtube.com/playlist?list=PLVZd4Ttp3K9XVhZ75Wjldqmx7Eh1h5Zbi) (https://www.youtube.com/playlist?list=PLVZd4Ttp3K9XVhZ75Wjldqmx7Eh1h5Zbi)

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