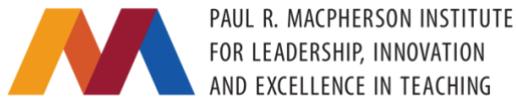




Innovations in Education Conference

Conference Schedule & Guidebook

December 9-10, 2021



Hosted by the
Paul R. MacPherson Institute for Leadership, Innovation and Excellence in
Teaching at McMaster University

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Welcome

Welcome and thank you for joining us for the inaugural year of the Innovations in Education Conference hosted by McMaster University's Paul R. MacPherson Institute for Leadership, Innovation and Excellence in Teaching.

For many years, the MacPherson Institute has offered separate conferences to explore topics related to teaching and learning, scholarly research and educational technologies. Through the past 21 months, we've learned first-hand how interconnected these areas are in our work. They are intertwined in our practices and have allowed us to adapt quickly during the pandemic.

The uncertainty and, at times, challenging shift to teaching and learning in a completely virtual environment forced many of us to ask important questions about what we would face in the future. We quickly learned how important it was to connect and engage with our community. To learn from the first-hand experiences of others and to consider ways to apply their experience in our own contexts.

With all of this in mind, as we began planning for our annual conferences, we reimagined our approach to launch a new event that truly represented the spirit of teaching and learning these past two years and the role that partnerships have played in making it all possible.

We hope you find the programming helpful, the connections valuable and the experience impactful. Welcome to the 2021 Innovations in Education Conference!

If you haven't already, please take a few minutes to view the welcome from Kim Dej, Acting Vice-Provost (Faculty), and Lori Goff, Director of the Paul R. MacPherson Institute for Leadership, Innovation, and Excellence in Teaching.

[Innovations in Education Conference 2021 – Welcome Remarks](#)

Keynote Speakers

Partnering across the 4M Levels: Collaboration and Companionship in Teaching and Learning

Thursday, December 9th, 9:05 – 10:05 am

There is increasing understanding of the great benefits of partnerships in nature, for example, amongst trees (Wohlleben, 2016). Academics, however, can be self-isolating to their own detriment, especially in times of greater stress. In this talk, I invite you to explore the possibilities that partnerships hold for energizing and augmenting academic work. I offer the 4M levels framework (micro, meso, macro, and mega) (Simmons, 2020; Simmons, 2009; Weston et al., 2008) as a heuristic to consider collaborations at each level. Some examples of these partnerships include: a chemistry professor working with a faculty developer to develop online learning communities, students working with a social sciences professor on why a teaching approach was so liberating and sharing that with a department, innovations in interdisciplinary course design and process, and colleagues within and across disciplines coming together to write about teaching issues all benefit from partnerships in teaching and learning. Whether your scholarly teaching practices comprise engaged and flexible learning, interdisciplinary courses, technological tools, inclusive approaches, or combinations of these, and regardless of whether you want to see impact in your classroom, department, institution, or beyond, partnerships at various levels can support excellence and innovation in teaching and learning.



Dr. Nicola Simmons is a faculty member in Educational Studies at Brock University. Nicola is a Canadian 3M National Teaching Fellow and holds a Brock Chancellor's Chair for Teaching Excellence. Past roles include Co-Chair of ISSOTL's Advocacy and Outreach Committee, VP (Canada) of ISSOTL, VP (SoTL) of STLHE, Founding Chair of both SoTL Canada and SoTL Ontario, and Chair of the Educational Developers Caucus of Canada. Her research interests include the Scholarship of Teaching and Learning, inspiring teaching and learning practices, online engaged learning, educator and SoTL scholar identity development and role making, and adult developmental psychology, specifically personal construct theory.

Strategies for Inclusive and Equitable Teaching

Friday, December 10th, 9:05 – 10:05am

Partnerships thrive in climates of respect, where differences are valued and celebrated. Klodiana and Lindsay will talk about the foundational principles of Equity, Diversity, Inclusion and Indigenization (EDII) to bring you a theoretical understanding of how to teach and lead with inclusive and equitable teaching practices. They will also share with you some best practices that are tried and tested so that you can adapt and adopt them for implementation in a variety of remote or blended learning environments.

Collectively, we will imagine and explore innovative educational leadership and teaching practices that will help us to build a pedagogy of peace, and a community of care, with and for all learners in our classroom communities. Teaching practices that once might have been considered 'radical' have now become critical for educators and learners alike.



Dr. Klodiana Kolomitro is the Associate Vice-Principal (Teaching and Learning) and cross-appointed to the Department of Biomedical and Molecular Sciences at Queen's University. In her role, she facilitates academic program development and review, develops and implements policies that promote academic excellence, and provides leadership on teaching and learning initiatives that are based on inclusive approaches and evidence-informed principles. Her areas of interest and research include inclusive pedagogies, anatomical education, well-being, and the scholarship of teaching and learning. She has a PhD in Curriculum and Pedagogy from OISE/University of Toronto, and a MSc in Anatomy and Cell Biology from Queen's University. Klodiana is the recipient of the 2019 Educational Developers Leadership Award from the Educational Developers Caucus in Canada, and the recipient of the 2021 Principal's Technology Team Award from Queen's University.



Lindsay Brant is from Tyendinaga Mohawk Territory. Lindsay has a Master of Education degree from Athabasca University, and an Honours degree in English Literature and Indigenous Studies from Trent University. She is currently pursuing her PhD in Cultural Studies part-time at Queen's University. She works as an Educational Developer, Indigenous Pedagogies and Ways of Knowing at the Centre for Teaching and Learning at Queen's. She is also an Adjunct Lecturer in the Smith School of Business. Lindsay and her colleague Kate Rowbotham won a 2021 Idea's Worth Teaching Award for their course in the Commerce program called Relationships and Reconciliation in Business and Beyond. Lindsay is also an accomplished creative writer and poet.

Conference Schedule

Day 1

Thursday Block 1	10:15 AM	Workshop 1: Sharing Space and Showcasing Student Voices in Humanities Teaching and Learning	Workshop 2: Using LinkedIn Learning to create customized learning paths for students enrolled in Commerce 2GR0	Panel 1: Student-Faculty Partnerships for Learning Through Specifications Grading Based Assessment	Panel 4: Proficient eLearners: How online faculty development shapes online instruction	Sandbox 1: Websites for All: The inclusive web project	Sandbox 2: An Interactive Feedback Model for Enhancing the Teaching and Learning Experience in Medical Sciences Education	Short Paper 1: Adopting the LinkedIn Learning Platform as a Learning Partner in Engineering Management Courses	Short Paper 4: This is a tough time for you, but we aren't gonna help at all	Short Paper 7: OXREF – Mainstreaming XR through Institutional Collaboration
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Thursday Block 2	11:00 AM	Workshop 3: But how does this apply to me? Using student-partnerships to increase applicability of inclusive teaching resources	Workshop 4: Using a Lightboard and OBS Studio for Teaching	Panel 3: Stories of Collaboration: Community Partner Perspectives and Experiences in Course-Based Critical Community Engaged Teaching and Learning	Sandbox 3: The Next Generation of Health Innovation & Entrepreneurship Education is... Personalized	Sandbox 4: The Simulated Interprofessional Learning Opportunities (SILO) Project: Creating Virtual Escape Rooms for Collaborative Health Innovation	Short Paper 2: Addressing the needs of independent research students in STEM	Short Paper 5: Tips from previous students: A novel students-as-partners approach to create a really useful Open Educational Resource	Short Paper 8: Adaptive Learning: Lessons from College and Technology Sector Partnerships	
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							Short Paper 3: Exploring the perception of the value of numeracy and statistical analysis skills among Life Science students	Short Paper 6: Adaptive testing as a formative assessment study tool	Short Paper 9: Improving First-Year Math with ALEKS, an Artificial Intelligence (AI) Learning and Assessment System	

Day 2

Friday Block 1	10:15 AM	Workshop 5: UDL in Our LMS	Workshop 6: Hands-On Mystery Game Workshop: A Scaffolding Case Study	Panel 7: Embedded Students' Supports in Canvas Courses: Collaboration Project with Faculty, Librarians, Learning Strategists and Academic Advisors	Panel 6: Sharing Space and De-Centralizing Power in the Humanities Classroom	Sandbox 5: Framing Pedagogy of Peace in the Context of Student Success	Sandbox 6: Using R to develop open-source course packages with computational notebooks: An example of transportation geography	Short Paper 13: Hidden Learning Outcomes in Virtual First Year Calculus		Short Paper 16: A Review of Post-Secondary 'Intergenerational Learning' Literature	
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Friday Block 2	11:00 AM	Workshop 7: The Innovator Games	Workshop 8: Mind the Gap: Arts-based strategies for Enhancing Essential Employability Skills	Panel 2: Student as Partners in Curricular and non-Curricular Work-Integrated Learning	Panel 8: Using Q Methodology to Revolutionize Course Evaluation	Sandbox 7: Benefits and Challenges of Student Curated ePortfolios Embedded in Health Science Professional Programs	Short Paper 11: Beyond the Classroom: World Music from the Musician's Point of View		Short Paper 14: Comparing in-person and virtual learning experiences with Echo360		Short Paper 17: Teaching and Learning Research at McMaster: Insights from Faculty Perspectives
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							Short Paper 12: Grade Negotiation Behaviours in Higher Education: Do Current Assessment Practices Represent a Barrier to Faculty-Student partnerships?		Short Paper 15: Discussion by Design: Re-envisioning Online Discussion Activities using Design Thinking in Graduate Health Professions Education		Short Paper 18: Mapping Data Literacy Learning Outcomes in the Life Sciences Curriculum

Day 1

Workshops

Workshop 1: Sharing Space and Showcasing Student Voices in Humanities Teaching and Learning

Authors: Sheena Jary, Catherine Gris , Adrienne Andrus

In *Teaching to Transgress*, bell hooks argues that, to build a classroom community in which we “hear” one another, the instructor “must genuinely value everyone’s presence. There must be an ongoing recognition that everyone influences the classroom dynamic, that everyone contributes. These contributions are resources” (8). hooks emphasizes the importance of partnership in the construction of an inclusive classroom community. As a part of our ongoing commitment to decolonizing the classroom and creating space for student voices, the teaching team for English 2RW6, a mandatory second-year theory course, has developed a skills-building workshop that will prepare students to become active partners in their learning experience. Our team hopes to engage conference participants in a segment of the workshop we have planned for our students to inspire conversation and knowledge exchange on innovative, holistic, and inclusive teaching practices.

After contextualizing the goals of the workshop designed for the students of English 2RW6, the activity segment will focus on an aspect of emotional agility, a concept developed by Susan David. The goal of the workshop is to encourage the growth of self-awareness—a pillar of emotional intelligence that influences how we engage not only in the classroom but in any community setting. The activity will be followed by a debrief and discussion, at which point we eagerly invite the feedback of participants. While the activity is intended for humanities teaching, it is not discipline-specific and therefore welcomes interdisciplinary participants.

Workshop 2: Using LinkedIn Learning to create customized learning paths for students enrolled in Commerce 2GR0

Authors: Jeannie An, Nidia Cerna, Shelley Rottenberg

The focus of the session is to demonstrate how the partnership between McMaster University and LinkedIn Learning can improve both online and face-to-face learning experiences for students through the creation and use of a LinkedIn Learning path for an undergraduate course.

This will be executed by using the LinkedIn Learning path created for Commerce 2GR0: DeGroot Student Experience and Development II (2021-2022) as a case study. This specific LinkedIn Learning path was created in the summer of 2021 and launched within the course at the start of the academic school year. The LinkedIn Learning path allows students to acquire knowledge, such as problem-solving; effective and persuasive communication; innovation and creativity; and data visualization. The course design team worked collaboratively with the

McMaster LinkedIn Learning campus coordinator to select LinkedIn Learning videos, and to create a customized learning path to assign as a required lab activity for students to complete throughout the course.

Workshop 3: But how does this apply to me? Using student-partnerships to increase applicability of inclusive teaching resources

Authors: Lisa Aikman, Melanie-Anne Atkins

In the 2020 academic year, the CTL's TA Programs division sought to work through a series of related issues and opportunities.

Issue 1: Our TA training courses needed to be completely re-designed for remote instruction and, with this redesign, we had the opportunity to embed EDI values and content throughout these courses

Issue 2: When presenting inclusive teaching practices in workshops or keynotes, we often got responses from graduate students that they were unsure how some of the strategies we suggested could be enacted by teaching assistants with limited power over the syllabus or classroom setup. How could we strike a balance between challenging our participants to enact institutional change and providing them with just-in-time resources and strategies?

Issue 3: We know that our graduate student employees (Teaching Assistant Training Program Instructors) gain valuable mentorship and experience through their work with us, but that we can only take on a limited number of students. How can we expand mentorship opportunities and otherwise include a wider variety of students in shaping our programming and priorities?

Our response to all the above issues involved including and elevating student voices. Using an adaptation of Healey and Healey's students as partners model (2019) and Schreiner's 2010 research into student thriving, this workshop will guide participants in evaluating the benefits and barriers of different models of student partnerships, using our own varied attempts at student partnership this past year as illustrative examples. Particular attention will be paid to how student partnerships can contribute to student thriving through fostering a sense of belonging. We will further share some suggestions from our student employees on ways to increase and diversify student partnership initiatives and solicit feedback from participants.

Workshop 4: Using a Lightboard and OBS Studio for Teaching

Authors: Michael Justason, Eva Mueller

Participants will be introduced to the set up and use of a home or office lightboard. Current lightboard users are welcome to join the workshop to share their experience, tips, tricks, and challenges. Participants without a lightboard are invited to watch the technology in action and learn about how they might use it to enhance their teaching. Both mini-studio-sized lightboards (54-in diagonal screen size) as well as desktop-sized lightboards (40-in diagonal screen size) will be demonstrated and discussed. All participants are invited to download OBS

Studio (a free open-source software). Participants will be guided through several live exercises that showcase the most relevant features of OBS Studio for teaching. Features such as, combining your webcam view with MS PowerPoint slides or images, removing image background colours (for interacting with, and writing on your images), scene transitions, and the use of hotkeys. Other OBS features that complement the use of a lightboard will also be discussed, such as, colour-correction filters, screen capture, and camera settings. The workshop and demonstrations will be conducted in Zoom however, the techniques demonstrated are also applicable to MS Teams. The workshop will mainly focus on live-synchronous teaching using OBS, the Lightboard and Zoom (or Teams), but many of the techniques discussed are equally applicable to the production of recorded content. Come learn how to take your virtual classroom to the next level!

Panels

Panel 1: Student-Faculty Partnerships for Learning Through Specifications Grading Based Assessment

Authors: Tai Munro, PhD, Paige McClelland, Elaine Tran, Mumui Alija

Specifications grading is one form of mastery grading that has been gaining popularity within higher education since Linda Nilson introduced it in 2014. It features four components that improve student autonomy and accept the role of failure in learning. In addition, it facilitates student-faculty partnerships in learning by increasing student ownership of the learning context and experience. Like anything that changes what we are used to, specifications grading can be met with resistance and confusion by faculty, students, and program chairs alike. However, the benefits of this approach outweigh the difficulties in beginning this journey.

This panel will feature a faculty member experienced with both using and researching specifications grading, an instructor who is brand new to implementing the approach, and two students who have experienced specifications grading for themselves. Developed with partnership and equity in mind, the panel will have each panelist ask their fellow members about specifications grading in order to discuss both student and instructor perspectives. This will include initial reactions, challenges and opportunities, learning and engagement, and how the approach can be implemented across a wide range of subject areas.

Panel 4: Proficient eLearners: How online faculty development shapes online instruction

Authors: Robin Sutherland-Harris, Lise Lareau, Andrew McEachern, David Rayfield, Joshua Thienpont

This presentation foregrounds the voices of four faculty members who reflect on their experiences as learners in the interdisciplinary online environment of faculty professional development, and how this experience shaped their approaches to teaching online, their understanding of student perspectives, and their teaching identities.

In 2020, York University's Teaching Commons launched an online, largely asynchronous, actively facilitated eLearning certificate, in which participants learn in partnership with one another to prioritize their own learning goals, make progress in designing courses, build community and share expertise with colleagues, and apply their learning immediately in meaningful ways, all while experiencing online learning from the student position.

It is the impact of this final aspect that this presentation explores: how does the experience of being a novice learner in online pedagogical training influence how faculty go on to design and teach their own online courses? What impact does taking on the role of a student in an eLearning environment ultimately have on faculty members' understandings of what it means to be a good online teacher? How does the learner shape the teacher when they are one and the same person?

In this panel, we will first provide a brief contextual overview of this certificate program. Discussion will focus on what it has meant for our online teaching practices to take on the role of a student learner in that same environment. Emergent themes centre the role of empathy, the potential of interdisciplinary online communities, and the power of partnership both between and with learners.

Panel 3: Stories of Collaboration: Community Partner Perspectives and Experiences in Course-Based Critical Community Engaged Teaching and Learning

Authors: Lindsey Thomson, Dr. Jeji Varghese, Dr. Mavis Morton

A facilitated panel of community partners will discuss diverse perspectives and experiences engaged in course-based partnerships across the College of Social and Applied Human Sciences (CSAHS) at the University of Guelph. Our dialogue will focus on enacting principles of critical community engaged scholarship (CCES) and will highlight the benefits and challenges of collaboration within the context of 1-semester (12-week) undergraduate- and graduate-level courses. Attendees can expect to hear from community partners engaged in long-term course-based collaborations with an overarching focus on scholarly partnerships which aim to co-create and mobilize knowledge for social justice.

To guide and inspire dialogue, the presenters will speak to insights from recent research into community partner perspectives on the processes and impacts of community engaged teaching and learning (CETL). Themes from community partner interviews which may shape our discussions include valuing community expertise, building long-term partnerships in the context of short-term curricular structures, intentional alignment and integration of learning outcomes and community priorities, and ensuring mutually beneficial partnership processes and impacts. How faculty/course instructors, students, and professional community engagement staff may adapt to better meet community partners working in complex contexts within and beyond the current pandemic will also be discussed.

This panel session welcomes faculty, course instructors, staff, students, and community partners who are interested in co-learning around effective strategies for enacting the principles of CCES in course-based partnerships. Attendees will have opportunities to ask

questions, share their own experiences, and engage in dialogue with panelists and other attendees.

Sandboxes

Sandbox 1: Websites for All: The inclusive web project

Authors: Sandi Gauder, Jennifer Jahnke, Ryan Joslin

The Websites for All: The Inclusive Web Project is a series of online modules that teach the fundamentals of web accessibility to high school and post-secondary students across Canada. The goal was to develop engaging and interactive learning modules.

The project team included members with web development, graphic design and video editing skills. A student from the Accessible Media Production program participated as part of their capstone project.

This session will present the perspective of partnership from a student's point of view. It will showcase our research, learning technologies and user testing process and will give participants the opportunity to engage with personas as a tool to determine accessibility and usability of course curricula.

The goal of the presentation is to showcase the valuable opportunity student partnerships can have in fostering a beneficial learning experience. Furthermore, it will explore practices that assist in creating inclusive content and give participants the opportunity to apply these skills.

Sandbox 2: An Interactive Feedback Model for Enhancing the Teaching and Learning Experience in Medical Sciences Education

Authors: Dr. Anita Woods, Dr. Sarah McLean, Nicole Settingington, Jenna Yuen

As higher education institutions transitioned to fully online teaching and learning environments due to the COVID-19 pandemic, the importance of effective pedagogical models was reinforced. This unexpected and abrupt change of curriculum delivery from previously well-established educational programs has not been without challenges, and subsequently identified a need for improvements in online teaching and learning practices.

A group of dental students and motivated faculty at the Schulich School of Medicine and Dentistry came together in response to the pandemic and established an online feedback model for dentistry students to provide real-time feedback on curricular content and delivery as teaching and learning shifted online.

After collecting pilot data from students and faculty on their perspectives of the feedback system, we implemented changes to our model of Students as Partners and re-established what we determined were essential elements. Our research will evaluate if our feedback system design facilitates reciprocal partnerships between students and faculty and contributes to the overall impact of students' educational experience.

During the sandbox session, attendees will be given a virtual tour of our streamlined online feedback system. By embedding Padlet, a collaborative platform technology, into Western's learning management system, OWL, our model displays how students can efficiently provide on-going course feedback and report issues related to content delivery.

Attendees will be invited to access and use our online feedback system. Additionally, a 15-minute discussion/Q&A will be utilized to invite attendees to be part of our discussion and share how they elicit real-time feedback in their courses.

Sandbox 3: The Next Generation of Health Innovation & Entrepreneurship Education is... Personalized

Authors: Sarrah Lal, Hanna Haponenko, Komal Patel, Kavya Patel

The pandemic has exposed unmet needs in healthcare: creativity, the ability to interpret complex information, entrepreneurship and initiative, and leadership skills. The traditional model of in-person course- and degree-based education will not suffice as we move into an era of just-in-time learning. Online micro-credentials allow individuals from a variety of geographic locations to engage in personalized learning experiences at a convenient time and in an easily accessible location. Health Ventures is a set of micro-credentials, courses, and certificates that provides timely, accessible, and industry-relevant experiences that work for any schedule.

These explicitly align with industry needs to i) enhance creative future-oriented thinking, ii) identify and evaluate opportunities for value creation and impact, iii) understand global intellectual property and regulatory considerations, iv) create testable concepts, prototypes, and market-ready solutions, v) assemble market entry and funding strategies, and vi) collaborate with individuals across disciplines and organizations to accelerate the innovation economy.

Health Ventures is designed in response to challenges we have observed in health entrepreneurship education. We teach how to manage risk, develop resilience, access resources for venture development, plan appropriate milestones, align teams, present impactful business cases, and discern strategic and technical considerations to optimize resources. Students can track their learning through a proprietary health innovation competency acquisition tool called iNav[®] to understand their strengths and opportunities for transferable growth. Join us to learn more about competency-based self-directed "stackable" health entrepreneurship experiences, engage in a discussion on implications for the future of education, and explore the tools for yourself.

Sandbox 4: The Simulated Interprofessional Learning Opportunities (SILO) Project: Creating Virtual Escape Rooms for Collaborative Health Innovation

Authors: Denesh Peramakumar, Sarrah Lal, Allison Sohanlal, MacKenzie Cullip

Healthcare unites professionals from administration, direct patient care, new technology development, research, and other areas. Effective collaboration requires us to understand the

roles of others and work towards a common goal. This is increasingly important with integrated care initiatives and cross-institutional partnerships. Do we have learning opportunities to help us break out of our silos? Escape rooms are immersive games that challenge teams to solve puzzles within a given time frame. While initially used for recreation, escape rooms have been incorporated into healthcare education as simulation-based learning activities, boasting improved knowledge retention, learner engagement, collaboration and a sense of preparedness for real-life situations. Escape rooms have been offered virtually and are unaffected by extenuating circumstances (e.g. pandemic). While virtual delivery reduces resource requirements, improving scalability and accessibility, these virtual 'rooms' often use modalities (e.g. Google Forms and QR codes) that do not offer high engagement for learners.

We are designing an virtual escape room platform that allows interprofessional teams to work together in real time in simulated interprofessional learning opportunities (SILO). Educators will use this platform to create scenarios based on their specific learning objectives and topics of interest, while also accessing a library of pre-existing escape rooms.

Innovation requires collaboration across disciplines to co-design new forms of value. We have developed the first series of escape rooms with learning objectives aligned with health innovation and interprofessional competencies. Join us to learn more about virtual escape rooms, play one yourself, and re-imagine the future of educational environments.

Short Papers

Short Paper 1: Adopting the LinkedIn Learning Platform as a Learning Partner in Engineering Management Courses

Authors: Allan MacKenzie

Today, many professionals work in a climate of continual change and innovation, especially in engineering technology. The challenge is to provide students with an education that enhances their aptitude for continued self-directed learning and helps them gain enough confidence to initiate, maintain, and finish any endeavour they like. Unfortunately, many professionals do not have the skills and abilities needed for lifelong learning. So, one of the most important issues for higher education institutions should be whether students are developing a belief in and commitment to lifelong learning. Thus, adopting early habits and tools for lifelong learning is something we need to help our learners embrace before they leave our institutions. Enhancing this awareness can start with being introduced and interacting with learning platforms that are typically outside university educational parameters for undergraduate students.

This presentation aims to illustrate how the linked In learning (UL) platform was used as a "learning partner" to complement lessons in second and fourth-year engineering management courses to enrich learning outcomes for the students.

Ranging from how selectively curated third -party content was interwoven asynchronous into the course learning framework, along with specific learning

objectives, including reflective assignments and rubrics that could be readily modified across different disciplinary contexts. Research of the student 's perspective on using UL as a complementary learning asset will be shared. Ultimately, the session wishes to engage participants in thinking about how UL could become a learning partner to augment their particular course learning outcomes and help nudge students towards lifelong learning tendencies.

Short Paper 2: Addressing the needs of independent research students in STEM

Authors: Katie Harding, Abeer Siddiqui, Saad Ahmed, Raymond Tolentino

As STEM librarians (University Library), we teach science and engineering students how to work with information sources, manage data, and communicate their knowledge. These skills are particularly important to students who are conducting research, but it is difficult for librarians to reach students who are engaging in research opportunities outside of the curriculum. In this project, we aimed to create a series of live workshops and/or stand-alone modules to help student researchers in science and engineering learn skills related to information literacy, data literacy, science communication, and navigating academic culture.

In Summer 2021, we partnered with students [first student name] (Life Sciences, Faculty of Science} and [second student name] (Integrated Biomedical Engineering & Health Sciences, Faculty of Engineering) and conducted interviews with undergraduate research students and faculty supervisors in Science and Engineering. We determined what content would be most useful for research students and students' preferred modes of content delivery. We identified curricular gaps in 3 primary areas: 1) searching the literature, 2) reading the literature critically, and 3) building confidence and creating a sense of ownership of a research project. In this session, we will discuss these curricular gaps in greater detail and how we plan to address them and better support undergraduate researchers in Science & Engineering.

Short Paper 3: Exploring the perception of the value of numeracy and statistical analysis skills among Life Science students

Authors: JM Pritchard, K Shah, M Gholiof, T Hittner, N Piskuric

Focus: Numeracy skills are important in helping undergraduate students acquire employment after graduation. Exit survey data from the Life Sciences Program show that 68% of students rate the level of achievement of numeracy and statistical analysis skills as 1/5 or 2/5 (5 being high).

Objectives: Our aim was to assess the importance of numeracy skills, and types of numeracy skills cooperative (co-op) education supervisors and thesis/research practicum supervisors value in placement students.

Methods: With a Life Sciences student-partner, we sent out surveys to co-op supervisors (n=114) and thesis/research practicum supervisors (n=96) in August-September 2021. The following were assessed using a 7 point Likert scale (strongly disagree, disagree, somewhat

disagree, neutral, somewhat agree, agree, strongly agree): supervisor's perception of the value of numeracy skills; types of numeracy skills; and level of knowledge and numeracy skills that incoming Life Sciences placement students have.

Results: A total of 41 supervisors responded to the survey (41/210 [19%]). Preliminary analysis revealed that 32/41 (78%) of respondents somewhat agreed, agreed or strongly agreed that incoming students should have experience using statistical analysis software (i.e., SPSS), however, only 16/41 (39%) respondents somewhat agreed, agreed or strongly agreed that incoming students have the basic skills to generate summary statistics for data.

Conclusion: This study highlights the gap between the numeracy skills that Life Sciences students have and the skills that are valued by co-op and thesis/research practicum supervisors. In our session, we will present all study results and specific recommendations for curriculum modifications to address this gap.

Short Paper 4: This is a tough time for you, but we aren't gonna help at all

Authors: Sharon Lauricella

Mental health issues such as overwhelm, exhaustion, depression, and anxiety have long been challenges for college and university students - and that was before COVID-19 upended student academic and social life. Subsequent to the onset of the pandemic, students have experienced new struggles associated with social isolation, an abrupt shift to online learning, and increased concern for their own health and the health of family and friends. In a 2021 survey of undergraduate students, all respondents reported being negatively affected by the pandemic in some way, and 59% reported high levels of psychological impact (Browning et al, 2021).

Thus, Holmes et al (2020) declared an urgent need for research to address how mental health consequences for university students can be mitigated under pandemic conditions. In this interactive session, I will address what students say is affecting their mental health by reporting on data collected via the popular social media channel TikTok. I took the approach of consulting social media because current research on student mental health is largely limited to formal institution sanctioned surveys. Identifying students' unfiltered comments via social media is likely to reveal more authentic results than asking students to self-report by means of an optional, conventional survey. Faculty are very often the first port of call for students seeking mental health support, and report that they need more guidance on how to help (Flaherty, 2021). This paper outlines what students say they have been struggling with, and how faculty can adjust how they approach, support, and accommodate students in partnership with mental health supports on campus.

Short Paper 5: Tips from previous students: A novel students-as-partners approach to create a really useful Open Educational Resource

Authors: Ritchie, Kerry L., Tishinsky, Justine M., Versluis, Ali M., Murrant, Coral L. and undergraduate student contributors

One of the largest impediments to creating new course materials is the development time required on the part of the faculty. This session presents a novel students-as-partners approach that allowed faculty to oversee the development of an open educational resource (OER), while offering nearly 100 undergraduate students a meaningful experiential learning (EL) opportunity in teaching and learning. Open pedagogy is premised on the idea of making the teaching and learning process public and visible, while the students-as-partners model recognizes students as experts in their own learning and consciously places students as active contributors to their learning by encouraging meaningful participation in course development and pedagogical consultancy.

In this collaborative, multi-year project, small cohorts of senior undergraduates enrolled in a semester-long research course where they were tasked with finding, evaluating, and curating openly licensed learning objects that would have supported their learning in two large physiology courses. Throughout the process, students were required to reflect on their role as both teachers and learners, thereby incorporating a unique perspective missing from traditional course resources.

This session will share our newly completed OER and showcase how an independent-study course can provide a simulated workplace experience for students to develop skills in professionalism, research, and project management, while also forming an understanding of complex topics such as intellectual property and copyright. We will discuss the possibilities open pedagogy offers in terms of EL, with an emphasis on scalability and modification to suit a variety of settings.

Short Paper 6: Adaptive testing as a formative assessment study tool

Authors: Benjamin Potter, Wil Adams, Longxi Lin, Jan Pohls, Danielle Brewer-Deluce, Paul J. Berti, Sharonna Greenberg

In partnership with students, postdoctoral fellows, and faculty, we are creating a low-stakes Chemistry Formative Assessment Study Tool (called Chem-FAST), based on principles in cognitive psychology. Chem-FAST will enable students to practice their understanding of course material, improve their long-term retention, and think critically about their learning and problem-solving skills.

Our students' primary study resources in level I Chemistry are the past assessments. Students comment that solving past assessments is the best way to learn the material, and they consistently request more practice questions with higher degrees of difficulty. Our instructors similarly value past assessments. Through prior research, we have created a Test Archive and Analysis System (TAAS), which contains a database of past assessment questions, along with their associated difficulty level and discrimination index. The TAAS is primarily a tool for instructors to design better assessments and use class time effectively. We are now extending these efforts to create Chem-FAST: a tool for students to maximize their learning.

Chem-FAST is based on questions from the TAAS and utilizes adaptive testing: incorporating more difficult or less difficult practice material on an individual basis. Our program uses the open-source Concerto platform (<https://concertoplatform.com/about>), modified to suit our needs.

In this session, we will outline the process of adaptive testing and you will try it yourself. We will also highlight our considerations for applying Chem-FAST as a formative assessment tool and our work thus far in designing the program.

Short Paper 7: OXREF – Mainstreaming XR through Institutional Collaboration

Authors: Dr. Ishan Abeywardena

In this short paper, I will introduce the Open Extended Reality for Education Framework (OXREF), which is a conceptual framework proposing a holistic solution to XR object creation, implementation and deployment covering pedagogical, technical and administrative perspectives. Increasingly, many governments and institutions around the world are making major investments in virtual reality (VR) and augmented reality (AR) technologies preparing education systems for the future. However, many of these investments remain isolated pilot projects which tease at what the potential future of education could be, but unlikely due to scalability, sustainability and a lack of institutional collaboration. Based on literature and empirical evidence, I have identified that (a) the lack of content, tools and skills; (b) the lack of sound pedagogy and instructional design; and (c) sustainability to be major barriers to the wider adoption of XR in education. The contribution of the OXREF is the ability to build immersive XR projects in a scalable, sustainable and collaborative manner promoting openness, accessibility, equity and reuse by harnessing the full potential of open educational resources (OER) and free and open-source software (FOSS) while utilizing cloud-based infrastructure for large-scale distribution and outreach.

Short Paper 8: Adaptive Learning: Lessons from College and Technology Sector Partnerships

Authors: Don Eldridge

Meeting the needs of learners with diverse knowledge, learning preferences, and readiness for postsecondary education is one of the greatest challenges faced by educators. Adaptive learning technologies help meet this challenge by leveraging the power of artificial intelligence and machine learning to continuously modify instructional content based on the behaviours and needs of learners resulting in a personalized learning experience.

CampusOntario is working with educators across Ontario to explore and understand the challenges and opportunities of designing and implementing adaptive learning technologies. This qualitative descriptive research study examined the experiences of eight Ontario colleges and their partnerships with three platform developers in the design and/or implementation of adaptive learning technology. Educational contexts involved specific skilled trades competencies and general communications courses. Experience data of educators was collected by way of a standard end of project survey and analyzed for common themes.

Consistent with the literature, the research findings show the importance of educator autonomy in the creation of content, professional development opportunities, readily available technical support, and effective team relationships in developing adaptive learning tools. Participating educators generally saw the value in adaptive learning but noted several barriers such as time commitment, access to granular and cataloged content, ability to integrate platforms with institutional learning management systems, and more.

This presentation will discuss adaptive learning, share the findings from eCampus Ontario's pilot studies, and offer important considerations for educators implementing adaptive learning.

Short Paper 9: Improving First-Year Math with ALEKS, an Artificial Intelligence (AI) Learning and Assessment System

Authors: Karen Bernhardt-Walther, Mauri Hall, Robert J. McKeown

First-year students often struggle when they lack a strong foundation in precalculus maths. Instructors have frequently observed students unable to divide fractions, manipulate logarithms, or answer simple word problems. Without these skills, students are effectively blocked from many courses in economics, business, and STEM fields. To develop a strong foundation in mathematics, we partnered with McGraw-Hill to use ALEKS, an online learning environment, during the first four weeks of a first-year mathematics for economics course. ALEKS uses an AI tutor to diagnose the knowledge of each student in more than 250 pre-calculus topics. The AI then creates individualized learning paths that guides students toward mastery. The students worked with ALEKS for four-weeks then wrote an online test.

The remaining eight weeks of class was dedicated to calculus and ALEKS was not used. Survey responses show that the intervention increased student self-confidence, understanding, and the likelihood that they would continue in a math-based discipline. The correlation between performance on ALEKS and a calculus test is statistically significant. Our intervention is scalable, cost-effective, and can be implemented in face-to-face, online, or a blended environment. Our session will engage with the audience using polling questions to foster discussion about their experiences with student preparedness for first year and the resources their institutions offer incoming students.

Day 2

Workshops

Workshop 5: UDL in Our LMS

Authors: Darla Benton Kearney, Amy Cook

Increased class sizes, more diverse students, greater accommodation needs, less time, enhanced use of technology; these were all challenges for higher education well before 2020.

Then a global pandemic was declared! Teaching and learning has been difficult, especially in the last 20 months. The need for Universal Design for Learning (UDL) to support inclusive and holistic teaching and learning has never been greater.

At Mohawk College we wanted to leverage our current technology-mediated teaching and learning to support increased UDL implementation and its capacity to address our access and inclusion challenges. The question became: How do we provide UDL education and support UDL implementation when faculty are already stretched beyond their limits? Build it into the learning management system (LMS) of course! UDL elements have been embedded into Mohawk College's LMS in the form of a course template.

The UDL in Our LMS session will give a detailed overview of Mohawk College's Course Master Template with UDL elements and its development. The session will also include a tour of our latest template version with specific references to the UDL principles and checkpoints the template aims to address in our online teaching and learning environments. Participants are encouraged to bring their experiences, challenges and questions to this interactive session.

Workshop 6: Hands-On Mystery Game Workshop: A Scaffolding Case Study

Authors: Gurleen Dulai, Ranmeet Dulai, Deborah Dutton, Gabrielle Gonsalves, Jamie Malakulang, Vaitheeka Nallasamy, Akash Patel, Chinmay Sheth, Somaiyeh Vedadi, and Christopher Kumar Anand

This hands-on workshop will demonstrate techniques for scaffolding learning suited to virtual and hybrid environments, making use of shared documents (e.g. Google Slides or MS Sharepoint). We have adapted these techniques to learning at levels from grade 4 to graduate studies. Participants will be guided through Google Slide templates that we use to scaffold the creative process from ideation through implementation, using the example of creating a Mystery Game. This workshop will guide participants through Mystery Game ideation and team formation, up to the point where teams have working app templates and would normally start coding. No coding knowledge is required for this workshop. Throughout the process we will explain how principles of technical, affective, strategic, and cognitive scaffolding guided the design of our templates, the comments made by students and what we think are the main advantages of this design approach.

Outcomes: Participants will learn about the different types of scaffolding, with typical classroom examples and specific examples taking advantage of shared documents in virtual and hybrid settings. Participants will receive the templates from the workshop as well as a collection of templates we have developed for Design Thinking.

Workshop 7: The Innovator Games

Authors: Kavya Patel, Sarrah Lal, Hartley Jafine, Keegan D'Mello

Many health innovators struggle to communicate with unfamiliar stakeholders (e.g. administrators, clinicians) and navigate ambiguity. Much of early-stage innovation requires

rapport building, familiarizing with new information, and negotiating possibilities and, as such, we have designed a unique competency-based educational experience that trains individuals. The Innovator Games (IG) provides a safe space for individuals to test out different approaches because the performance you want takes practice!

IG is a four-stage workshop. The early stages focus on theory and understanding through applied improvisation, to build confidence when heading into uncharted areas. The later stages focus on mastering skills through simulated learning experiences to better understand problems and unmet needs. The workshop will focus on the first two stages to introduce improvisation and role-play. The participants will engage in 10-minute scenarios with increasing difficulty of constraints such as embodying characters in interdisciplinary settings, incorporating character goals, and interacting with a devil's advocate.

This interactive session will focus on applied improvisation to foster growth in new mindsets and to enforce reflective practice, play theory, and recognizing what characters are 'fighting for' in different contexts. Participants will practice perspective taking, asking thoughtful questions, and navigating uncertainty. This is based on an ongoing study to develop a set of McMaster University health innovation and entrepreneurship competencies. Participants will be placed in groups of 3-5 to 'play' through various scenarios with different levels of complexity. A short debrief session will be held to address any questions and to allow for reflection on their performance.

Workshop 8: Mind the Gap: Arts-based strategies for Enhancing Essential Employability Skills

Authors: Dr. Christine Boyko-Head, Glenys McQueen-Fuentes, Nana Gulic

Communication is an essential transferable skill. Yet, many learners struggle with oral and written expression. They also struggle with creative-critical thinking and collaboration. What if an accessible, agile framework could help learners overcome writing blocks, essay anxiety, thesis paralysis and collaboration anguish? What if learners combined this framework with arts-based learning strategies, an awareness of their cognitive preferences, and had fun in the process?

This innovative, interdisciplinary research project, called Mind the Gap, was conducted with diverse Communications classes at Mohawk College from 2017-2019. The themes of partnerships and collaboration were interwoven throughout. Externally, collaborations came from International Centre for Studies in Creativity - SUNY Buffalo, FourSight Thinking Preferences LLC, Chicago, and from diverse interactions with Brock University, specifically Dr. Joe's Norris' Mirror Theatre student group. Internally, collaborations came from the Office of the Vice President Academic who funded the project and from the Indigenous Education office.

In class, Mind the Gap modeled 'reciprocal participation' where lines between instructors and learners were deliberately blurred to encourage equity and enhance opportunities for finding personal voice. Workshop participants will explore two to three embodied learning activities from the project to experience how a triangulation of innovative frameworks amplified key

transferable skills and helped learners become more empathetic communicators, equitable collaborators and confident, creative-critical thinkers. In the words of one observer, “this isn’t your ordinary communication class – they’re having too much fun!”

Panels

Panel 7: Embedded Students’ Supports in Canvas Courses: Collaboration Project with Faculty, Librarians, Learning Strategists and Academic Advisors

Authors: Connie Lyon, Diane Fjordbotten, Ina Baczuk, Greg Gibos, Tatiana Kloster

First-generation students often don’t know what support services they need to be successful in post-secondary education (Dadgar et al., 2013a); some students are not aware of the supports available (Nodine et al., 2012). However, student involvement in their college experience strongly correlates with the positive outcomes from that experience; to be successful, students have to experience belonging in the college community (Wolf-Wendel & Ruel, 1999). As demonstrated by an extensive literature review, student support services work best when integrated into learning environments (Dadgar et al., 2014). This project leverages evidence-based practice for course and support design and includes all three services—Library, Learning Centre, and Academic Advising—and explores options for increasing support sustainably across the institution.

In this panel discussion, we will examine the history of embedded librarians and strategists at Lethbridge College. We will also briefly outline a preliminary holistic student support framework that guided embedding specialists into course design to ensure students get access to the right support at the right time. The panelists will discuss experiences of collaboration, reflect on the influence of COVID-19 pandemic on embedded supports, and share practical strategies that drive student engagement.

For this session, we plan to use Mentimeter, an online presentation platform, to facilitate our audience’s reflection on how the framework we created might be adapted for a variety of contexts.

Panel 6: Sharing Space and De-Centralizing Power in the Humanities Classroom

Authors: Sheena Jary, Dr. Catherine Annette Grisé

This panel will bring together four speakers from the Humanities to discuss recent, innovative practices to partner with students and create an inclusive classroom community. The speakers are Dr. Aytak Akbari-Dibavar (new faculty in Global Peace and Social Justice/Gender and Social Justice), Alpha Abebe (Faculty of Humanities, Global Peace & Social Justice), Esra Bengizi (Department of French, University of Toronto), Rachel Shadid (second-year English student and Student Youth Ambassador at Dare to Be Youth Charity). The participants represent the diverse roles that create the learning experience. If we are to discuss the ways that instructors, TAs,

and students partner together in the learning process, then we must invite all voices to the conversation.

We will be asking the panelists to speak to one or more of the following questions, drawing on their own experiences:

- Describe a time when you experienced teaching and learning as a partnership. What made this experience successful?
- How and why do you view learning as a partnership between instructors, TAs, and students in the classroom (virtual /in person)?
- Are there pedagogical theories or models that inform the ways you view the learning process and the roles of instructors, TAs, and students in the classroom (virtual /in person)?
- What would the ideal learning experience look like and how would instructors, TAs, and students interact in this ideal space and time? What barriers or challenges are there to this ideal?

One of the goals of this session is to showcase the practice of building partnerships among undergraduate, graduate, and instructors.

Panel 2: Student as Partners in Curricular and non-Curricular Work-Integrated Learning

Authors: Dr. Jessica Riddell, Dr. Toni Roberts, Matthew Dunleavy

The COVID-19 pandemic in 2020 posed several challenges to Post-Secondary Institutions, including the move to online learning in a short amount of time. In June 2020, Bishop's University hired 23 students as Online Learning and Technology Consultants (OLTCS) to help faculty prepare for Fall 2020. They underwent training on Students as Partners (SaP) literature, empathetic design, pandemic pedagogy, High-Impact Practices, and authentic learning design. After their training—which included online modules, simulations, faculty mentorship, and technology training—the program launched in July 2020.

Following the success of the SaP model for course design during the Bishop's pilot, the Business + Higher Education Roundtable (BHER) provided support to expand the program across the other three institutions that make up the Maple League of Universities (Acadia, Mount Allison, and St. Francis Xavier). In this roundtable we will share the program's impact on students, faculty, and the institutions more broadly across three phases of the project: Phase I—the Bishop's pilot (2020-21); Phase II—the co-curricular Work-Integrated Learning expansion of the program across the Maple League (2021-22); and, Phase III—a 3-credit, curricular Work-Integrated Learning version of the program hosted at Mount Allison (Fall 2021).

We will share how adopting SaP in the design of COVID classrooms increases students' social and emotional intelligence, technical and digital literacy skills, critical thinking, project management and other significant learning gains. We do not, however, solely see the benefits in students, but will illustrate how faculty and teaching staff involved in the program and

consulting with students during course design have been transformed themselves and have created more accessible, adaptive, and flexible learning environments for their students.

Panel 8: Using Q Methodology to Revolutionize Course Evaluation

Authors: Noori Akhtar-Danesh, Danielle Brewer-Deluce, Jessica Saini, Ilana Bayer, Bruce Wainman

Course and faculty evaluations that rely on qualitative feedback and Likert Scale-based evaluations are common but provide insufficient granularity of responses, a lack of prioritization of issues and a complete insensitivity to subgroups. In contrast, Q methodology-based evaluations arise from comments made directly by the students, prioritize statements that are of greatest importance to students and accurately detect subgroups of preferences and opinions within the cohort.

To carry out a Q methodology study, a large sample of authentic statements from students are gathered (“the concourse”). The concourse is refined to remove redundancy and increase clarity and this focused group of statements yields a Q statement set. The participants are then asked to sort the statements onto a bell-shaped grid based on agreement with the statement and also relative to each other such that, for example, “strongly agree” can only be applied to, at most, two statements. The distribution of the statements on the grid then undergoes factor analysis which reveals overall opinions (“consensus statements”) about the course and subgroups (“factors”) with similar opinions, preferences, and values.

In this panel session we will present an introduction to Q-methodology (Dr Akhtar-Danesh) and two examples of Q-methodology course evaluations applied to improve courses during the Covid pandemic (Ms Jessica Saini, “Using Q-Methodology to Evaluate Online Anatomy Education: Learning in a COVID-19 Context” and Dr Bruce Wainman “Consecutive Qs - The impact of pandemic-related course modifications on students’ learning experiences”). At the completion of the presentation an online Q-method evaluation tool will be explained and then administered by the panelists to give the audience a chance to experience Q-methodology evaluation. This will be followed by a general Q&A about the use and potential of Q-methodology.

Sandboxes

Sandbox 5: Framing Pedagogy of Peace in the Context of Student Success

Authors: Yunyi Chen, Lindsay Brant

The Pedagogy of Peace (Brant & Morcom, 2021) is a purposeful teaching and learning model that builds upon the three core teachings of the Haudenosaunee Great Law of Peace, which are peace, strength, and a good mind. It provides a holistic model for educators who are looking for ways to create inclusive learning environments and classroom communities for all students.

To answer the research question of how to incorporate Indigenous knowledges to support students from diverse racial, cultural, linguistic, and educational backgrounds with academic success, we have begun to explore the integration of the Pedagogy of Peace into the Senses of Student Success Model (adapted from Lizzio, 2006). Lizzio's model helps educators focus pedagogical practices on the key components of student success, including connection, competence, academic culture, purpose, resourcefulness, and educational equity.

The purpose of this sandbox session is to seek feedback from the audience on the early-stage development of the new integrated framework focusing on student success. In the session, participants will firstly explore the Pedagogy of Peace to build some foundational knowledge and engage with the new framework in terms of asking questions, making comments, and providing feedback. Participants will have the opportunity to work in small groups to reflect on how to incorporate this new framework into their own disciplinary or academic context to enhance student learning experience as well as academic success. To ensure active learning within the session, interactive tools such as google doc, breakout sessions, and live chat will be used to encourage engagement.

Sandbox 6: Using R to develop open-source course packages with computational notebooks: An example of transportation geography

Authors: Shaila Jamal, Elise Desjardins, Geoff Boeing, Robin Lovelace, Antonio Paez

In this Sandbox Session, we aim to showcase the use of the statistical language `R` for developing open and free course packages. The session will discuss the conceptual background, architecture, and potential advantages, as well as challenges of such packages. The example is the course ENVSOCTY 3LT3: Transportation Geography at McMaster and its associated package `envsocty3LT3`, which consists at its core of data sets, documentation, and computational notebooks. Computational notebooks are documents that contain text, code, visualization, and analysis outputs, and that are exemplary of a literate computing approach. The notebooks in the course package have three characteristics. First, they contain narratives of the story/reasoning/rationale of a particular problem, relevant real-life data, and all computational code required to solve it. Second, the notebooks are examples of reproducible research; even after the end of the project, learners can understand what has been done and can reproduce the work either to learn the process or build new ideas from it.

Finally, users can take ownership of the notebooks, and can build from them to extend their knowledge with examples and annotations of their own. Ultimately, the package can evolve into customized course content as unique as each user's learning style, preferences, and objectives. The course package is developed in `R`, so distribution and sharing is as simple as installing a package. The example presented can serve as a template for a more universal approach to share content, and instructors/students at other institutions can adapt it using locally relevant examples with relative ease.

Sandbox 7: Benefits and Challenges of Student Curated ePortfolios Embedded in Health Science Professional Programs

Authors: Allison Sohanlal

As professional practice programs focus on applied learning the ability to have one place to document the learning journey over time benefits students and faculty. The use of ePortfolios as a core component of professional programs is an excellent way to highlight skill acquisition, reflective practice, critical thinking and professional growth. This session will focus on an interactive and engaging discussion related to the use of student ePortfolios in our program, their role in shaping professional identities and future research on the value and impact of our ePortfolio program. The content of the sandbox session will be led by a recent graduate of our program and a faculty member to represent various perspectives.

ePortfolios can be used for many purposes and we have chosen to use them as a way for our students to document their journey throughout our graduate program. ePortfolios have also created a new and more engaging way to present individual skills and experiences when applying for clinical internships. An optional extension of our ePortfolios is to utilize them for job applications as students graduate from the program.

Our health science program has been utilizing ePortfolios for the past four years and the opportunity to discuss benefits and challenges with other faculty, staff and students in a sandbox format is valuable to share ePortfolio experiences, recent student feedback and gather various perspectives and experiences about potential ePortfolio research with those attending the session.

[Short Papers](#)

Short Paper 11: Beyond the Classroom: World Music from the Musician's Point of View

Authors: Dr. Ryan Bruce, Dr. Howard Spring

The authors report on an ongoing project to create a video library of musicians from diverse traditions demonstrating and discussing their performance and creative practices. Musicians who participated were native to, or expert in, the music of Canada, Cuba, India, Bali, Turkey and Iran. The purpose of the project is to provide a resource for students and post-secondary teachers in Ontario to hear directly from musicians about their music and the circumstances in which they make it. Focusing on diversity and inclusion, the project supports voices that are not typically heard in an academic setting and yet are pivotal in our understanding of world music. Access to the musical insider's point of view is a hallmark of ethnomusicological research and we argue that this is true for the teaching of world music.

The presentation will consist of examples of the video footage and accompanying text, as well as a discussion of the unique value to students and teachers of facilitating direct expression by musicians about what they do.

Short Paper 12: Grade Negotiation Behaviours in Higher Education: Do Current Assessment Practices Represent a Barrier to Faculty-Student partnerships?

Authors: Andrew Horne, Tyler Beveridge, Sarah McLean

Students' academic stress can negatively impact their motivation, their academic goals, and their behaviour. Negative behaviours associated with academic stress can be described as "grade negotiation behaviours" or more commonly, grade-grubbing. Allen (2017) describes a grade enquiry continuum (GEC) that seeks to characterize student's behaviours with instructors into four categories: grade neutral, grade enquiry, grade challenge, and grade-grubbing. Anecdotal reports suggest a high prevalence of grade challenging/grubbing attempts in higher education and the motivations for these behaviours are unknown.

This study explores the prevalence of GEC behaviours in undergraduate medical science students, their perceptions at negotiating grades, and the factors that motivate grade challenging/grubbing attempts. We used a qualitative study design that included two phases. In phase I, a survey was administered to 2,500 undergraduate medical sciences students to examine the self-reported prevalence, perceptions and motivations for grade challenging/grubbing. Phase II explored the perception of losing versus earning grades and whether these perceptions influenced participants' grade negotiation behaviours.

Our results suggest that students' perceptions of grades are challenging to modify. Qualitative findings suggested that many students within the study population are extrinsically driven by career goals and view their grades as a way to competitively distinguish themselves for post-graduate programs. These motivational factors and perceptions towards grades may be influencing these adverse behaviours. Ultimately, if faculty wish to engage with students as partners, we must address the fact that current grading practices are encouraging students to adopt an extrinsic motivation mindset which may not be amenable to students as partners initiatives.

Short Paper 13: Hidden Learning Outcomes in Virtual First Year Calculus

Authors: L. Daniels, C. Junkins

As with many incoming students, there are non-content specific learning outcomes that students master during their first year as they transition from the high school to post-secondary learning environment. With the added stress of the COVID-19 pandemic, students in the 2020-2021 academic year faced unique challenges, both in student learning experience and teaching delivery.

As part of a bonus assignment, students were asked to highlight something that they felt proud about at the end of the term. The text responses were anonymized and preliminary analysis on 500 responses was performed using in vivo coding to identify broad themes. Using supervised machine learning via a support vector machine, the remaining 1100 responses were classified into the identified themes.

Qualitative analysis of the responses shows several themes that encompass the student learning experience. We analyze how these themes changeover different terms and find that students transition from a survival mentality in Fall to a thriving mentality in Winter. In particular, students move up in Bloom's taxonomy from the understanding and remembering to applying, analyzing, and evaluating as students evolve their learning strategies for the university classroom.

This analysis identifies vital lessons from the hidden curriculum of university level education, which promote student success in the classroom. These themes are crucial to understanding and enhancing teaching delivery, classroom dynamics, teaming objectives, and support for students. Finally, we give some possible avenues where this analysis can be leveraged to enhance teaching and student experience for the next cohort of students.

Short Paper 14: Comparing in-person and virtual learning experiences with Echo360

Authors: Stefan M. Mladjenovic, Zoya Adeel

The focus of our session is to explore learning technologies and their ability to facilitate active and flexible learning in undergraduate classrooms. The objective is to disseminate our research and engage in meaningful discourse with attendees. We will employ polling, questions to the audience, and colour-accessible visuals to facilitate an interactive seminar. Research summary: Many university students face barriers to learning in physical classrooms. Still, some instructors are reluctant to adopt a hybrid/flexible (HyFlex) teaching approach out of concern that it may negatively affect students' learning experience and academic performance.

In this study, we conducted a survey to explore students' experiences with Echo360 as a platform that supports HyFlex teaching and learning. (n=238). Our survey data revealed that most students find multiple Echo360 features helpful when engaging with and learning course content. We also compared Echo360 engagement scores and final grades between in-person dominant learners and online dominant learners in HyFlex offerings of a skills-based and a content-based course in the 2019/2020 academic year (pre-COVID).

We found a modest correlation between engagement and final grade in both courses, whereby students who were highly engaged achieved high grades regardless of their dominant mode of participation. Our findings suggest that a HyFlex learning environment in Echo360 does not negatively affect the learning experience and may actually support success for students. As Canadian universities transition back to physical classrooms, our findings remind us to retain the flexibility that virtual teaching and learning affords to address diverse student accessibility needs.

Short Paper 15: Discussion by Design: Re-envisioning Online Discussion Activities using Design Thinking in Graduate Health Professions Education

Authors: Muhammadhasan Nasser, Ilana Bayer

Asynchronous online discussion (AOD) is a useful tool to increase learner engagement and comprehension of course content.(1-3) Nevertheless, while there is a myriad of evidence

examining its theoretical underpinnings, there is a dearth of literature examining the experiences of learners within AOD.(3,4) The application of Design Thinking to higher education can enable stakeholders to uncover challenges and explore solutions that meet the genuine needs of learners.(5) As a human-centred approach, Design Thinking engages the end-user in shared-decision making and the design process, making them invested and valued partners in educational innovation.(6,7)

By centering learner voices, educational stakeholders can intentionally address the challenges and opportunities that are fundamental to learner engagement and incorporate learners' needs into AOD design to improve its quality and pedagogical value. This presentation will explore the use of Design Thinking to collectively re-envision AOD in the Health Science Education MSc Program at McMaster University.

We conducted a multi-step explanatory qualitative study with learners, faculty, and staff through empathy mapping, semi-structured interviews, and focus groups. This session will also provide insight into the application of a Design Thinking approach to graduate online education, examining the associated strengths, weakness, best practices, and limitations. Additionally, the session will include interactive demonstrations of the stakeholder engagement strategies used in our design-based pedagogical initiative in an exclusively online environment. Overall, this presentation highlights the use of Design Thinking to collaborate with learners and understand their experiences to fuel the co-development of innovative pedagogical solutions that are feasible, effective, and end-user-focused.

Short Paper 16: A Review of Post-Secondary 'Intergenerational Learning' Literature

Authors: Yvonne LeBlanc, Equity Burke

This paper uses a critical gerontological lens a) to identify the current trends and central foci of intergenerational learning in post-secondary gerontology and/or aging studies programs and b) to assess knowledge gaps with respect to intergenerational learning approaches.

A scoping review of 'intergenerational learning' literature was conducted. To document the process, we used a standardized tool known as PRISMA, and a thematic approach to codify and summarize the results. Articles were selected for inclusion based on the following specified criteria: peer reviewed, published in English between 2010-2020, and based on findings in Westernized countries. Core terms including 'intergenerational learning', 'post-secondary', 'college' 'university', 'older adult', and 'Canada/UK/Australia' were searched on the following data bases: AgeLine- EBSCO host, ERIC-Proquest, Scholars Portal, Web of Science (Social Science) and Proquest.

Key findings indicate that most research related to intergenerational learning in post-secondary institutions is generated through health and social service professions, with an emphasis on fostering student interests in working with older adults and assisting the aged population. To a lesser extent, there is some evidence of innovative approaches that promote reciprocal, collaborative intergenerational learning in programs either within or affiliated with post-secondary institutions.

Although ‘service learning’ is an important component of aging education, there is a gap in the research that considers university-based learning opportunities wherein young and old have the opportunity to mutually engage with and learn from each other. Further research on novel approaches to ‘intergenerational collaborative learning’ is both warranted and timely.

Short Paper 17: Teaching and Learning Research at McMaster: Insights from Faculty Perspectives

Authors: Kelsey Harvey, Alyssa Minhas, Martha Cassidy-Neumiller, & Julia Evanovitch

Background: The MacPherson Institute’s 2019-2022 strategic plan called for creating “A Shared Understanding of the Value of Teaching and Learning Scholarship” across campus. Toward this aim, we conducted an environmental scan, the goals of this project were threefold: to categorize the range of ways faculty/staff name and describe systematic inquiry into teaching and learning; to identify how faculty/staff engage with scholarly literature on teaching and learning; and to understand faculty/staff motivation to engage in research on teaching and learning.

Methods: This environmental scan included a university-wide survey of McMaster faculty and staff, as well as interviews with faculty who conduct research on teaching and learning. This paper focuses on the results of interviews with eight faculty members using an inductive, thematic approach. Our sample represented myriad faculties at McMaster (Science, Arts & Science, Health Science, Social Science, Engineering, Business, and Humanities), included faculty from every rank, and was equally stratified by faculty identifying as women and men.

Findings: Findings speak broadly to gatekeeping what is considered ‘worthwhile’ research and the ontological, epistemological, theoretical, and substantive tensions existing therein. Specifically, our findings speak to the marginalization of teaching and learning activities, including research-related activities, in higher education and the ways in which the institutional culture at McMaster University has aimed to support teaching and learning inquiry.

Conclusion: We conclude by offering recommendations, grounded in our data, for disrupting the status quo of teaching and learning research at McMaster University to support innovative and collaborative inquiry across and beyond the institution.

Short Paper 18: Mapping Data Literacy Learning Outcomes in the Life Sciences Curriculum

Authors: Ana Tomljenovic-Berube, Abeer Siddiqui, Jawaria Karim

Data literacy can be defined as the skills needed to interpret, collect, manage, represent, and produce data. Life Sciences students consume, collect, and produce data in many forms; however, data literacy instruction and assessment are not scaffolded strategically in the program curriculum. This research study explored to which extent data literacy instruction and assessment is embedded in the Life Sciences Program (LSP) through collection and review of

curricular products (i.e. course outlines, assessments, class activities) and interviews with thesis project supervisors.

The research team consisted of a Life Sciences faculty member, the science librarian, and a former Life Sciences student which ensured the study was informed by different perspectives and experiences within the existing LSP curriculum. The aim of the study was to identify gaps in student data literacy training in order to provide future recommendations for curricular refinement. Our study identified key courses in the LSP that assess data literacy skills and highlighted areas for improvement, particularly with respect to practical application of statistics. Supervisor interviews reinforced concerns around students' mastery and comfort around data analysis, statistics, data management, and data visualization. Interviewees spoke to students' general anxiety around these skills, and further expressed concerns about students' ability to interpret data significance in real life contexts, acknowledging this to be true for all Science students they have supervised. Our study supports strategic integration of data literacy learning outcomes and scaffolded assessment to better prepare upper-year students for their thesis projects and future academic and professional pursuits.

Posters

Poster #1: Universal Design of Interactive Notebooks on Programming – [View here](#)

Authors: Bin Guo, Jason Nagy, Emil Sekerinski

Jupyter notebooks allow for “interactive textbooks”: programs are embedded in the notebook and can produce textual or graphical output, which is then included in the notebook. Historically they were developed for “reproducible research”, in particular for data analysis, but are now increasingly used for programming courses. This talk presents the rationale behind tools and a guideline for the Universal Design of Jupyter notebooks containing programs, explanations, graphics, algorithms, and proofs, all of which may have mathematical symbols. The tools improve accessibility for readers and ease the authoring of such notebooks at the same time. The tools and guidelines are currently being used for all material of a course on concurrent system design and a course on formal languages and compiler construction at McMaster. They are open-sourced and can be used for other courses relying on Jupyter notebooks with mathematical, algorithmic, or graphical notation.

Try out this notebook for yourself at:

<https://mybinder.org/v2/gh/nagyj2/jupyternotebooks/HEAD>

Install the JupyterLab extensions from: <https://gitlab.cas.mcmaster.ca/nagyj2/unicode-snippets-ts>

Poster #2: One tech can't rule them all: Supporting accessibility and engagement with multiple technologies – [View here](#)

Authors: Mark Lubrick, Lorna Stolarchuk

Accessibility refers to "the degree to which a product, device, service, or environment is available to be used by all intended audiences" (Council of Ontario Universities, 2013). When courses are designed and delivered with a focus on accessibility, more students from diverse identities and abilities are able to engage and to participate meaningfully with the course content. Ensuring accessibility in higher education is essential. How can you best support faculty in this endeavour when they may not be aware of what is required? This poster session will describe how one institution has introduced multiple technologies to help support the campus with ensuring accessibility. Panorama can be used as a proactive tool to evaluate how accessible a course and the related content is and guide instructors to the trouble spots with their materials. Further, it can also create accessible alternate multimodal access to documents for users. This tool operates within the learning management system. Read & Write can be used to supplement this as more of a reactive tool, especially for students. Whether functioning as a screen reader, creating accessible scanned documents, or creating an OCR readable text via screenshot, Read & Write can help make accessible documents on the fly. This tool operates with any online web sources, including the LMS. A brief demonstration of each tool, as well as lessons learned and pain points, will be followed by a question-and-answer period.

Poster #3: Student Engagement, Success, and Research Inquiry - [View here](#)

Authors: Dr. Sarah Clancy, Shaina McDonald, Raisa Jadavji, Claudia Meneguzzi

Our poster presentation will share project progress and development, as well as early lessons learned and reflections from the research team for the 2021 PALAT-funded research project, "Student Engagement, Success, and Research Inquiry: Creating a Safe and Inclusive Conference Research Space for Social Psychology Undergraduate Students through Student Partnerships." The presentation will share how the PALAT funded project takes an innovative, holistic, and inclusive approach to teaching and learning, two subthemes of the conference. First, the PALAT funded project is built on partnerships with both current and former students of the Social Psychology Program, with students as research partners, as well as student as participants in the conference activities, events, and in research via the feedback exit survey. Through sharing lessons learned in the early stages of conference and research planning and development, the research team will communicate how the project fosters relationships, leads to collaboration between students, alumni, and faculty, and last, how these types of partnerships are an important part of active and flexible teaching, and learning spaces. Second, the poster presentation will communicate how the project is part of a larger movement towards innovative, holistic, and inclusive teaching and learning practices by addressing a gap in the student learning experience, fostering a sense of community and belonging for students by providing a safe and inclusive research space (where students feel comfortable, safe, and included) to engage and share their knowledge, building capacity and refining skills in communication and research, thereby facilitating and supporting teaching, learning, and research.

Poster #5: Research experiences for aspiring physicians: An analysis of medical school admission policies concerning research involvement in Canada - [View here](#)

Authors: Laurie Yang, Irene Chang, Stacey Ritz, Lawrence Grierson

Background: Many aspiring physicians engage in research to support their medical school applications; however, the degree to which these experiences indicate commendable candidate qualities is unclear.

Objective: This study describes the ways in which Canadian medical schools articulate the importance of research experiences in publicly available policy documents.

Method: Publicly available selection criteria, application materials, institutional and research-related web pages associated with the 17 Canadian medical schools were reviewed alongside high-level Canadian articulations of important competencies for physicians and analyzed using a qualitative descriptive approach. Concordance and/or discordance concerning a school's stance on the importance of research experiences in their selection criteria and application materials were considered.

Results: Research experiences are not explicitly required for entry into Canadian MD programs; however, there are expectations that graduating physicians should understand research. All Canadian medical schools signal appreciation for the value of research on an institutional level. Review of selection criteria and application materials show that there were both intra-institution and inter-institution discordance concerning the importance of research experiences for medical school applicant selection.

Conclusion: It is worthwhile for medical schools to appraise their admission policies and criteria for clarity. Given all aspiring physicians do not have equal access to research opportunities, this should include consideration of the unintended and possibly exclusionary implicit messages delivered to learners.

Poster #6: Bridging the Disconnect Between Academic Institutions and Employers in the 4th Industrial Revolution - [View here](#)

Authors: Nicole Rakowski

The skills gap is widening and causing greater inequality in the today's workplace. Our economy within the fourth industrial revolution is skewed towards the highly talented and there are social consequences for those graduating from academic institutions during this technological revolution

The way in which we live has been dramatically altered - income and poverty is climbing, drug addictions are on the rise, crime rates and depression are increasing and there is a significant loss of confidence in political systems globally.

As the lead researcher of the Students Partner Project at McMaster University, I began my analysis by conducting an in-depth literature review on self-guided education theory, self-directed learning (SDL), strategies for engaging students in career content, evidence-based research on why this topic is important, and what a hybrid approach to engaging students and

supporting them in skills development may look like. In addition to the literature review, I conducted key informant focus groups with students within the Science Career & Cooperative Education program.

Combining and analyzing both the qualitative data gathered from the participants and the information obtained from the literature, commitment to self-directed learning requires students and faculty to both understand the value of empowering learning to take increased responsibility for decision making. Academic institutions need to address skills required to become self-directed learners and must present students with the environment that lets them be more self-directed.

Poster #7: Reality Simulation for Training Challenged Learners - [View here](#)

Authors: Prakash Bansod

The cohort that we serve are usually diagnosed with disorders such as autism, dyslexia, ADHD, Asperger's Syndrome, Down Syndrome and Cerebral Palsy. Employment related interpersonal skills are the most challenging skills to develop due to attendant communication disorders, empathy deficits and low self-esteem.

High-end graphics animation, that are currently adopted by the gaming industry, is being used to create lifelike avatars of a student using AI based software. This avatar not only looks like the student, but also moves and talks like the student. The objective is to create interpersonal scenarios where the avatar is seen to accomplish complex interpersonal tasks that would otherwise be unlikely to be accomplished by the student in real life. The hypothesis is that the student's self-confidence, self-esteem and knowledge retention will be greatly enhanced if the student sees a "superhero," modelled after him/her, succeed. A short video of this Reality Simulation, applied to interview preparation, will be presented.

The development to date is in the early stages where there is no interaction with the student. Further work could use the Application Programable Interface to make the simulation into an interactive interpersonal game, where the student's avatar overcomes obstacles by developing relationships and using negotiating skills.

Reality simulation lends itself to a network of collaborative participation. Game designers, 3D animators, special education instructors (who provide the pedagogical direction,) script writers and storyboard designers could work together to develop the instructional module.

Poster #8: A student-instructor partnership evaluating reflective writing to guide curricular improvements in health informatics education - [View here](#)

Authors: Cynthia Lokker, Rita Jezrawi

Graduate students are encouraged to reflect on their learning, but seldom taught how to do so. Reflective essays can be a form of evidence for quality improvement to highlight the quality and strength of a course's pedagogy and determine students' critical reflection capabilities. In our

student-instructor partnership project, we thematically analyzed 95 anonymized student reflective essays by health informatics graduate students with a taxonomy of learning, codes developed from the rubric, and themes derived from literature to identify course strengths and weaknesses and student reflective practice. We identified four major themes: (1) foundational knowledge acquisition and understanding, (2) integration and critical reflection, (3) self-discovery and imagining possibilities, and (4) sharing and the human dimension. Within these themes, students shared thought and emotions towards personal and past experiences, and new knowledge gained. The findings reinforced the use of pedagogical approaches (small group tutorials, hands-on experiences, and guest lecturers). Reflective writing is a fairly new practice for many students in this interdisciplinary program and we found that a substantial amount of the essay content was non-reflective and reverted to formal representation of content. Based on factors inherent in the assignment design that limited student reflective practice, we have iterated the reflective essay to provide clearer guidance to students and incorporate approaches throughout the term to support them in using reflection to meet their intellectual and socioemotional learning needs. Conducting this research as a partnership allowed for the pedagogical and student experience to be integrated into the interpretation of our findings and effectively included the voice of the students in the course.

Poster #9: Roadmap to a Course-Integrated Goal Setting and Planning Program - [View here](#)

Authors: Christian Kleiser, Emma Marsden, Portia Kalun, Herry Patel, Heather Poole, Michael Wong, & Ayesha Khan

While postsecondary students have long been recognized as a population that experiences high levels of stress (Booth et al., 2015), a recent survey (Canadian Alliance of Student Associations, 2020) suggests that the COVID-19 pandemic has exacerbated the stress typically experienced by undergraduate students. Accordingly, students need strategies to foster success in academic situations. Integrating such strategies within undergraduate courses may improve the student experience by allowing undergraduates to practice balancing course workloads, personal or social obligations, and activities of general well-being.

Our group of student partners and faculty adapted an existing open-access program (Growth and Goals Module; <http://www.flynnresearchgroup.com>) to promote time management and goal-setting skills among undergraduate students. The program requires students to engage in frequent organization and planning practices and to later reflect on the success of their practice. Students completed questionnaires and reflections throughout the term, allowing us to track their experience and changes in various measures of academic success. We implemented the program within two undergraduate courses in the Faculties of Science and Health Sciences at McMaster University.

Our poster will outline the strengths and limitations of including time management and goal-setting activities in an academic environment. Moreover, our poster will highlight the importance of partnerships between students (at different academic levels and areas of study) and faculty when developing, implementing, and refining this program. In doing so, we aim to provide a roadmap to others who are interested in offering similar course-integrated programs.

Poster #10: Use Interactive Storytelling Trailers to Engage Students in an Online Learning Environment - [View here](#)

Authors: Forrest Hisey, Tingting Zhu, Yuhong He

Studies show that the number of online students is increasing faster than those taking in-person courses. While online classes offer a few advantages, including improving accessibility for students who cannot attend in-person classes or saving hours of daily commuting time, challenges exist. It is reported that online students are more likely to withdraw from their studies than face-to-face students. As student engagement is a crucial predictor of learning outcomes in an online learning environment, this study investigates the use of interactive storytelling lecture trailers (ISLTs) as an engagement tool. The ISLTs were 2-3 minutes in length that serve as a preview for the lecture content. The trailers interweaved the actions and dialogues between the instructor and another character that is relevant to course topics in telling a cohesive story. Making the instructor as one of the main characters complements the teaching presence, while the other character enhances the learner-content interaction. Questions were embedded in the trailers to encourage active learning and solicit students' feedback. Students watched the trailers, responded to the embedded questions, and voiced their opinions about the engagement of trailers through surveys and interviews. Observational data and survey show that ISLTs are effective means for enhancing students' behavioral, emotional, and student-instructor engagement.

Poster #11: An Examination of Student Partnerships within a Teaching Assistant Development Program - [View here](#)

Authors: Irene Muir, Paige Coyne, Elizabeth Ismail

The GATA Network, a teaching assistant development program at the University of Windsor, facilitates opportunities for graduate and undergraduate students to foster pedagogical knowledge and seeks to develop leadership capacity through workshop delivery. Specifically, the Network aims to partner new student presenters with experienced facilitators or faculty, allowing them to share their responsibilities with a co-presenter. This model allows for the cultivation of accountability, professionalism, and networking, and it also allows for partnerships between students and their peers, faculty, and the teaching assistant development program. The collaborative and reciprocal nature of student partnerships provide an opportunity for students to "contribute equally, although not necessarily in the same ways, to curricular or pedagogical conceptualization, decision making, implementation, investigation, or analysis" (Cook-Sather, Bovill, & Felten, 2014, p. 6-7). The current poster presentation is an examination of student partnerships within a teaching assistant development program. This poster provides a discussion about the benefits and challenges of student partnerships more generally, describes the nature of partnerships within the University of Windsor's teaching assistant development program, and highlights the experiences and features of these partnerships.

Poster #12: Promoting Innovative and Inclusive Assessment through Assignments Across Disciplines – [View here](#)

Authors: Andrea Williams

As the creative engine of teaching, (Germano and Nicholls, 2020), assignments drive learning (Bean, 2001). Assignments that provide a clear explanation of purpose, task, and evaluation criteria help all students succeed, but are especially important for first-generation students and those from marginal and racialized groups who face systemic barriers in higher education Winkelmes et al (2016). Inclusive and equitable teaching requires transparent, but how do we promote and share transparent assignments amongst instructors?

This digital poster enables participants to browse the almost three dozen assignments in a growing open-access collection, Assignments Across Disciplines (AAD). Through a collaborative peer review process, AAD engages both contributors and users in cross-disciplinary conversations that promote accessible and inclusive assessment and TILT (transparency in learning and teaching in higher education) principles. This poster and discussion encourages participants to contribute assignments and serve as peer reviewers and students to nominate assignments that have helped them learn.

From the instructor perspective, transparency around assignments prompts a reconsideration of how we credit intellectual work and define intellectual property in the academy. Like other teaching genres, the importance of assignments to student learning has been overlooked and the expertise required to create them unacknowledged. For example, academic developers are often key contributors to assignments but rarely given credit. In short, this poster presentation aims to prompt discussion about assignments from a variety of perspectives.

Poster #13: Uncovering the Perceptions of Grades in Dentistry Students - How grades are impacting learning & Clinical Development – [View here](#)

Authors: Jenna J. Yuen, Andrew Horne, Tyler S. Beveridge, Sarah McLean

Introduction: Grades in healthcare professional schools may be doing more harm than good. In fact, some suggest grades have lasting negative impacts on professional development and the ability to navigate clinical settings. However, little has been done to understand the student's perspective on grades and how they feel it is impacting their clinical progress. Therefore, the aim of this study is to determine the most prevalent grade perceptions among dentistry students, and to investigate how this impacts their learning and development of clinical skills.

Methods: To investigate dentistry students' grade perceptions and its effect on learning and clinical development, this study distributed an online survey and conducted virtual semi-structured interviews/focus groups. Investigators developed a codebook to iteratively and thematically analyze the data.

Results: Fourteen grade perception themes were identified. The two most frequent perceptions were: ranking tool, and evaluation/feedback tool for knowledge and comprehension. Seventy

participants participated in the survey; 70% agreed that grades guided their learning/studying strategies; 91% agreed grades were a reflection of the ability to memorize content; 85% did not think grades accurately represented their practical skills; and 89% agreed that grades determined their acceptance into specialty/residency programs.

Conclusion: Dentistry students are mainly perceiving grades as a ranking tool because of their use in admission processes (i.e., dentistry school, specialty/residency programs). While some are in- favor of grades helping their learning, the majority of students agree that grades reflect memorization rather than understanding, and that 0-100% scales provide little added benefit to clinical development.

Poster #14: From virtual campfires to zoom mentoring: Translating immersive, interdisciplinary learning experiences for graduate trainees in aging to an online setting – [View here](#)

Authors: Allison Dubé, Audrey Patocs, Alison Outtrim, Parminder Raina, Laura Lawson, Susan Rogers, Carly Whitmore

The CIHR-IA Summer Program in Aging (SPA) is an immersive educational program for graduate students and postdoctoral fellows. The McMaster Institute for Research on Aging (MIRA) was selected to host SPA 2020 on the topic of longitudinal studies on aging featuring Canadian Longitudinal Study on Aging (CLSA) data. The COVID-19 pandemic made it impossible to host the event in-person and staff reimaged it as the first ever virtual SPA in May 2021. Fifty-four graduate students and postdoctoral fellows from institutions across Canada and Europe participated in this interdisciplinary training opportunity over the course of 10 days. Moving an immersive in-person educational program online presented challenges. The team integrated internationally renowned speakers, networking opportunities, learning from community partners, and exposure to expert mentors. Trainees had access to a website that acted as a virtual home-base with everything from participant biographies to a session schedule with Zoom links, a Discord channel for out-of-class conversations, social programming, and a welcome package that generated excitement and brought the program straight to participants' doorsteps.

During the program, teams developed problem-based group projects, which they presented to a panel of judges. Top-ranked teams received awards to facilitate developing their project into full research proposals using CLSA data. All winning teams took advantage of this opportunity. This high conversion rate demonstrates an upside to virtual programming; the remote setting allowed participants to continue to collaborate after programming ended. This virtual SPA offered valuable lessons in accessibility, structuring learning opportunities with broad subjects, and creating engaging virtual content.

Poster #15: Remote Teaching and Learning Tools for Nursing PBL Tutorials – [View here](#)

Authors: Maria Pratt, Habiba Helmy

Background: The quick shift to online and remote teaching and learning environments amid the COVID-19 outbreak paved the way for modifying resources to support students during the pandemic. The purpose of this project is to evaluate the impact of online learning activities in entry-level problem-based learning (PBL) nursing tutorials.

Methods: This quality-improvement project compiled online learning activities (e.g., Kahoot, Quizlet, and Virtual Escape Room) that the instructor can use to assess their students' knowledge, comprehension, and application of nursing concepts in their virtual synchronous tutorials. While these activities were developed to further enhance classroom engagement and learning, they also serve to test students' learning asynchronously at their own pace.

Results: At midterm, students (n = 47) completed an anonymous survey on the suggested learning activities in the course's learning management system. The survey is a combination of Likert-scale and open-ended questions that assessed the students' perceived level of engagement with each activity, and whether the activity helped to highlight the nursing concepts and required course materials. Sixty-five percent of the students rated the activities as very good to excellent. The three main themes that emerged from the analysis of the students' responses included facilitation of the learning process, knowledge comprehension, and application of learning.

Conclusion: This project exemplifies how the student's learning experience is enhanced through the adoption of educational technologies. As more courses begin to transition back to in-person learning environments, the online resources developed for these tutorials can continue to be used for in-person classrooms.

Poster #16: Investigating The Gap in Interest and Preparedness In Introductory Physics Courses – [View here](#)

Authors: Daniel Dobrowolski, Dr. Clancy, P., Dr. Schmidt, M.

As a student partner, I was part of an investigation into first year physics with the hopes of improving the experience of physics students at McMaster. The observed gender gap in physics testing is a problem which plagues physics education. Many studies in universities across North America show that female students consistently perform worse than male students on written examinations and concept inventories, though the size of this performance gap varies from study to study (Madsen et al, 2013) (Normandeau et al, 2017). In some cases, this gender gap in performance has been partially explained by test anxiety (Agra et al, 2017), differences in self efficacy (Marshman et al, 2018), or other internalized factors.

An online survey was distributed to three streams of introductory physics at McMaster University, asking a range of questions including demographic information, self-reported interest and preparedness, study methods, and about other core components of the first year physics experience.

This survey, run in the 2020 Fall through 2021 Fall semesters (and ongoing), it was found that Female students at McMaster are less interested in physics and report feeling less prepared for

their upcoming courses than their male counterparts. This may cause gaps in representation in upper year courses, and the realization and tackling of this problem is a step towards creating a more inclusive environment for physics students at McMaster.

Poster #17: Exploring Introductory Physics Courses as a Student Partner – [View here](#)

Authors: Nitara Fernando, Pat Clancy, Miranda Schmidt

Introductory physics courses are required at McMaster for students in three different streams: physical sciences, engineering, and life sciences. The background preparation of these students, as well as their attitudes towards the course, can greatly vary. As an upper year physics student, and a student partner, I have been involved in a study to improve our understanding of these three student cohorts. Student partners have an important role to play in this type of study, bringing more recent and more diverse perspectives to survey design, analysis, and interpretation.

Online surveys were distributed to students in all three streams of introductory physics. End-of-term surveys were collected in Dec. 2020 (N=360) and April 2021 (N=158), and an entry survey was collected in Sept. 2021 (N=239). Students responded to open-ended questions regarding the most challenging aspects of introductory physics, and their responses were analyzed to extract major themes. Students cited a broad range of challenges, including both general aspects of physics (e.g. problem-solving, math, etc.) and specific topics covered in each course.

Our results show that the most challenging topics vary between different streams of physics and appear to be linked to both the level of mathematical difficulty and the order in which topics are taught. We have also examined student study habits to see if there are trends across different streams, genders, or other demographic groups that may influence course performance. These results will be used to identify specific skills, topics, or aspects of the course that may improve overall student performance and experience.

Poster #18: DODO: Blocky Coding for Visually Impaired Students – [View here](#)

Authors: "Jennifer Alejandra Cardenas Castaneda, Patrick C. K. Hung, Farkhund Iqbal Rafiq Ahmad

DODO" is a set of Artificial Intelligence (AI) tangible coding blocks constructed by different paper modules whose goal is to provide an affordable tactile-interactive way for visually impaired students to learn computer programming. Each module has its unique paper texture and colour. Thus, the students are able to make different programming concepts through the paper blocks. The dynamic consists of the students listening to different activities from an AI application, creating and expressing the code modules through the paper blocks. The students will receive instant feedback (a) through the professor if it is utilized in a classroom or (b) through the AI application with real-time object detection through a camera to move to the next level based on machine learning. The Felder-Silverman Learning Style Model is applied in DODO, which includes the preferred learning styles that visually impaired students prefer, such as (a) learning by trying things out, (b) working on their own, (c) sensing learners' preference, and (d)

supporting sequential learners. Thus, DODO allows visually impaired students to learn coding according to what they want and need, learning through tactile gaming, increasing their interest, and facilitating the understanding of coding logic. The objective of this proposed session relies on having a networking session with feedbacks to receive insights regarding the proposed DODO and keep improving it.

Poster #19: Anesthesia Virtual Resuscitation Room: a low-fidelity simulation platform to facilitate learner competencies – [View here](#)

Authors: Dr. Gabriel Simchovich, Puru Panchal, Dr. Mohamed Nassef

Multidisciplinary trainees remain underexposed to anesthesiology. (1) This challenge has been exacerbated by reduced clinical hours during COVID-19. (2,3) These conditions necessitate finding avenues to promote exposure to anesthesia and teach fundamental concepts. While high-fidelity simulation has traditionally augmented clinical experience, little progress has been made towards creating low-fidelity simulation opportunities.

Using the Virtual Resus Room (VRR), an open-access platform on Google Drive, we created a virtual simulation for medical students aimed at discussing effective operating room communication, performing pre-operative assessments and discussing anesthetic planning (Appendix A).(3) Among 34 medical students, we administered pre- and post-event surveys to capture interest in anesthesiology, comfort in simulation settings, and preferences for low-fidelity simulation. Quantitative data were gathered via Likert-based assessments, and qualitative data via free-text responses. Mean quantitative scores were compared via Wilcoxon signed-rank test, and qualitative data thematically analyzed. Participants indicated a consistent preference for resident-led facilitation and believed that the platform stimulated learning, and was appropriate for meeting learning objectives. Post-event assessments indicated higher mean scores for preparedness to communicate, delegate and make clinical decisions in crisis settings. Data also suggested that this simulation was perceived as effective for knowledge acquisition (mean 4.3/5).

After a successful pilot, low fidelity simulation has been integrated into the core clerkship anesthesia rotation. We developed three scenarios that are scalable in complexity depending on learner level and can accommodate multidisciplinary trainees (nurses, respiratory therapists). Future opportunities can be offered to interdisciplinary groups to facilitate role delegation and perioperative communication skills.

Poster #20: Investigating the Impact of Traditional and Voice-based Surveys – [View here](#)

Authors: Pan Chen, Naaz Sibia, Angela Zavaleta, Michael Liut

Motivation: The widespread availability of mobile devices allows users to choose their preferred mode of communication, either through voice or text. As instructors and researchers constantly ask students for feedback, we want to explore a natural mode to obtain better feedback in surveys.

Objectives: This study details a pilot study that demonstrates the importance of allowing students to choose the method they use to respond to surveys: voice or text.

Methods: A survey with several open-ended questions was deployed in an Introduction to Programming course. Correlations between the type of question, gender of the respondent, and their method of responding were evaluated.

Results: We found that the students assigned to the control group had a higher proportion of responses compared to the other two treatment groups. Longer responses were provided when students only had the option to respond by voice. Overall, female students were more likely to respond regardless of the mode than male students, but when given the option, female students prefer responding using voice whereas male students prefer the traditional text mode. The majority of male students do not have a strong preference between methods, but more female students expressed their preference in voice responses.

As part of presenting our current work, we would like to gather feedback and discuss ways of improving our methods and data collection.

Poster #21: Development of accessible and interactive online H5P modules to improve student engagement in a large enrollment class – [View here](#)

Authors: Nawal Hamza, Eric Bombardier, Veronica Rodriguez Moncalvo

Student-faculty partnerships are important for facilitating positive learning outcomes as well as student's engagement and skill development. For partnerships to be successful, clear project objectives, reciprocal constructive feedback, and a set timeline are crucial. Through our student-faculty partnership, we were able to create two interactive online modules, one being an experimental design simulation, using H5P. Our partnership had two aims: 1) provide an opportunity to hone the science literacy, critical thinking, and research skills of the student partner, while contributing her computer skills and previous knowledge of course content to ensure that the e-research simulation is appropriate and engaging, and 2) improve the student experience for the required second year undergraduate course LIFE SCI 2A03 – Research Methods in Life Sciences. In this course, students are introduced to the scientific method and explore best practices and approaches to hypothesis formulation, testing, interpretation, and science communication.

Due to the nature of online learning and the large course enrollment, accessible resources that meaningfully and actively engage students in experimental design to facilitate learning are limited and costly. The simulation created allows students enrolled in this course to: 1) apply content taught in lectures, and 2) further hone their research skills. In addition, it has provided our student partner with the opportunity to contribute to program curriculum and to improve the learning experience of junior students, fostering a sense of community belonging and mentorship. Lastly, this partnership has helped the student partner improve her communication, teamwork and time-management skills.