OTL Proposal

Alternate Forms of Assessment & Evaluation Working Group of the
Provost's Taskforce on Pedagogical Innovation

May 2021

Introduction

The purpose of this document is to summarize key principles for consideration by the Office of Teaching & Learning (OTL) for continuing to advance innovation in the assessment of students' learning. It is divided into three branches: supporting and enabling decentralized work, strengthening centralized resources, and building towards an "assessment lab," which could be a part of a larger teaching and learning innovation incubator. This is important for the operationalizing, testing and strengthening new approaches, and for the long-term sustainability of the work of Provost's Taskforce on Pedagogical Innovation.

Desired Future State

The working group that produced this document began by imagining how innovation in assessment would result in positive change at the University of Guelph. We asked ourselves: if there were to be widescale adoption of innovative approaches, what would be the result? Below are highlights of our desired future state.

The purpose of innovation in assessment is to improve the quality of students' learning by providing a meaningful feedback loop. This in turn helps to make learning deeper and longer-lasting. As a result, we would expect outcomes such as:

- Students who have earned a University of Guelph degree will be prepared for employment, community engagement, and future learning in a field related to their passions and curiosity.

- In an era where citizens have access to (and are targeted with) overwhelming amounts of information, U of G students will be critical thinkers and savvy consumers of information.

- Assessments will enhance learning such that students are equipped to help solve the most challenging problems facing people around the world and in our local communities.

In addition, innovation in assessment will create an environment that supports on-going improvements in teaching and learning. For example:

- Instructors will have the capacity and support to experiment with new approaches to assessment that enhance teaching and learning.

- The academic community will have reflected upon and documented what has been learned during the COVID-19 pandemic so that our future approaches can be informed by what we have learned from experience.

- Students will be seen as collaborators in the learning process and be increasingly motivated by the intrinsic rewards of learning.

Alternative Forms of Assessment

For the purposes of this proposal, assessment is seen as a broad range of strategies for giving and receiving feedback on students' progress towards the stated learning outcomes of a course, specialization, or degree program. Feedback helps students guide their own learning and helps instructors adjust their approach to teaching in order to be responsive to the students in the class.

In this context, four general themes emerged repeatedly in our discussions:

1. How do we design assessments that faithfully reflect the curriculum and help students acquire skills and knowledge that will be meaningful long after they have completed the course/program?

2. How do we protect academic integrity, particularly when there is a proliferation of online tools that make it easy and inexpensive to engage in academic misconduct?

3. How do we approach assessment in a way that enhances equity, diversity and inclusion; particularly for Black, Indigenous, and Persons of Colour, students with disabilities, women, international students, LGBTQ2IA+ and students who have intersecting identities that result in disadvantages/barriers in our systems of education?

4. How do we promote and sustain broad uptake of innovative and evidence based approaches to assessment across the institution?

Our working group noted that there is an abundance of innovative approaches to assessment already in use by early adopters (Oldenburg & Parcel, 1992) across the university, many of which are supported by scholarship (see Appendix A and B). This proposal, therefore, focuses on supports that are needed for further development in this area with the goal of promoting broader uptake across the institution.

Supporting Decentralized Work

Discussions of our working group have identified a myriad of innovative approaches to assessment and noted that OTL is already engaged with many of these alternatives. There is excellent scholarship available describing approaches to assessment that support and enhance students' learning, and that produce results that more faithfully reflect the curriculum. We have also noted that there are also early adopters (Oldenburg & Parcel, 1992) of these approaches in many different disciplines across the institution.

At the same time, there has been lots of discussion about challenges that prevent the uptake of promising alternative forms of assessment. One of the most frequently identified and fervently discussed barriers is the significant investment of time required to learn, consider and operationalize

these ideas. For this reason, many instructors are unlikely to engage with centralized opportunities and resources – they perceive that there is not the time to do so.

As an alternative, discussion about innovative approaches must be integrated into the on-going discourse at a local level (i.e. where instructors spend their time) across the university. Wherever faculty discuss day-to-day issues and engage with planning activities is where innovative approaches to assessment need to be addressed.

In other words, the place for these discussions is at academic department meetings, curriculum development and program committees, and informal discussions among colleagues. To this end, early adopters (those who value promising new ideas and have had success) need to be highlighted for the work they are doing to strengthen teaching and learning, and faculty in leadership roles need to facilitate and encourage these discussions.

For this strategy to be successful, the role of OTL must shift from the provision of frontline services and the facilitation of discussions that aim to bring more instructors on board with new approaches. Instead, it is recommended that OTL seek out leaders across academic departments and colleges, and encourage them to be facilitating these discussions at the local level. Critically, the focus should be on integrating discussion about innovative approaches in the life of the unit (e.g. college, department/school, program committee, etc.), rather than creating what may be perceived as additional work for individuals who already feel stretched thin.

Recognizing the range of leadership styles, operational pressures, and historical issues that shape how academic units organize themselves and function day to day, this work means seeking out leaders for one-on-one and small group discussions. Questions might include:

1. What ideas do you have to promote innovative approaches to assessment in your unit? Are there specific goals you are working towards? What support do you need?

2. Who is engaging with innovative approaches to assessment in your unit, and what could be done to highlight their successes?

3. Are there champions in your unit who would be interested in energizing discussion about innovative approaches to assessment? What support might they need?

4. How are new approaches to assessment being used to enhance equity, diversity and inclusion?

5. What program reviews or new curriculum is being entertained, and would it be possible to integrate innovative assessment into this work?

6. To what extent do the promotion and tenure documents in your department(s) encourage/discourage efforts to try new approaches to assessment? What would be involved in updating these documents to support efforts to be innovative?

7. What opportunities are there (or could there be) to give faculty the time to redevelop courses (or course components) with an emphasis on innovative pedagogy?

It is important to emphasize that advancing this strategy will involve many discussions over an extended period. To be successful, OTL will need to dedicate staff time to doing this work. It might be helpful to look for examples of academic departments who are already doing this work (e.g. Human Health & Nutritional Science) and to draw on the expertise of Learning & Development in Human Resources.

Strengthening Centralized Resources

For those instructors who are looking for guidance, quick and helpful resources are important. An online repository of resources can help to provide consistent language that describes the university's approach to assessment, articulates our values, provides practical guidance on operationalizing assessment, and helps instructors efficiently find useful information. Most importantly, as OTL is engaging with instructors about innovative approaches to assessment, the guides developed for this repository would serve as a point of reference to ensure on-going conversations are connected to best practices and scholarship in the area of teaching and learning.

Below is a list of potential topics that could be developed into online resources. Many of these ideas came from feedback from students about their experiences of assessments.

1. Determining how long it will take a student to complete a test or exam,

2. How to assess the workload of a course and set reasonable expectations,

3. How to build cultural humility into the presentation of course content and assessment of learning outcomes,

4. Appropriate uses of multiple-choice questions and how to design high-quality questions,

5. Determining the degree to which an assessment is "authentic,"

6. Assessing class participation in a way that has fidelity to the learning outcomes of the course and is inclusive of students from equity-seeking groups,

7. How to scaffold assignments to support increasingly advanced skills ,

8. How to teach and assess group work with consideration for principles of equity, diversity and inclusion (process not just outputs),

9. How to create take-home exams that do not require invigilation and have a high degree of academic integrity,

10. How to design inherently accessible online tests and exams,

11. Strategies for engaging students in long-term projects early in the semester (e.g. through scaffolding),

12. How to help students develop their own personal learning goals,

13. How to use formative assessments to enhance self-directed learning,

14. How the promotion and tenure process can support the advancement of innovation,

15. Why "performance under pressure" is unnecessary in most academic disciplines and how it is a form of structural discrimination, including:

    a. A critical examination of the purpose of time limits,
    b. Taking an approach based on compassion that helps foster an environment conducive to high quality learning,
    c. Using assessments as an opportunity to promote resilience by helping students to successfully navigate appropriately challenging expectations,

16. How "weeder courses" undermine the university's strategic goals and how to identify more constructive alternatives,

17. How test banks where students have an abundance of questions to guide their studying can enhance learning,

18. How to build an assessment plan that recognizes students as partners and collaborators in the collective learning process.

All of the potential topics identified above can have implications for enhancing equity, diversity and inclusion. As an important principle, newly developed or updated guides should be reviewed by content experts on EDI and accessibility before being posted to the web. A process for annually reviewing all content is critical.

It was noted that currently available online resources are fragmented, inconsistent, and sometimes contradictory across multiple departments at the University of Guelph. The university must have a curated and integrated source of information for instructors. This would include organizing and routinely maintaining information from the following departments into a cohesive source of information:

- The Office of Teaching and Learning
- Open Learning & Educational Support
- Diversity and Human Rights
- Student Accessibility Services
- The Library

This is not to say all of the information/guides need to be housed on a single website, or that all content needs to be designed by a committee of stakeholders. What is needed, however, is the following:

a. A single jumping off point that helps instructors get to the information they need (like a table of contents or index),

b. Clarification about which unit/department is going to take the lead on various themes or topics.

Building Towards an Assessment Lab

During discussions of the Provost's Taskforce, the idea of an "incubator" that promotes innovation in teaching and learning was raised. Incubators have been used in many contexts (e.g. promoting entrepreneurship and business development). In general, incubators provide support for the development of new endeavours through start-up funding, mentoring, resources, and assistance with translating an idea into an achievable action plan.

If the University of Guelph were to pursue the development of an incubator for innovation in teaching and learning, one element of that enterprise might be an "assessment lab". Drawing on the principles of "design thinking" (e.g. Overlap Associates), an assessment lab would provide a safe place to prototype new approaches to assessment before putting them into practice with a course of students.

The need for an assessment lab comes from discussions we had with both students and faculty. From a student perspective, innovative approaches that enhance learning are often welcome, but students get frustrated with approaches that are not well executed and that lead to confusion or poor grades. For instructors who take risks in trying out a new approach, if it does not go well, this is often reflected in negative course evaluations that can be harmful for promotion and tenure.

The system, therefore, favours traditional/conservative approaches that take few risks in the pursuit of innovation. An assessment lab would make innovative approaches less risky, by providing an avenue to try a new approach when the stakes are low and where mistakes would simply be treated as an opportunity to learn. This approach also endorses the idea that high quality assessments emerge from an iterative process. That is, the more times an instructor uses an assessment technique, the better it gets.

The goals of the assessment lab would be to:

1. Reduce the risks associated with trying a new idea,

2. Test the effectiveness of a new assessment vis a vis the learning outcomes of the course,

3. Determine whether the instructions and expectations are clear to students,

4. Gather input on how long it actually takes for a student to complete the assessment,

5. Identify barriers to equity, diversity and inclusion – does the assessment give an advantage to students from privileged backgrounds?

6. Ensure the needs of students with disabilities has been integrated into the assessment, both in terms of accessible design and procedures for academic accommodation,

7. Consider whether improvements or changes are needed in the marking scheme or rubric,

8. Solicit supportive feedback from students, experts in pedagogy, and experts in equity, diversity and inclusion in order to strengthen the approach,

9. Facilitate the development of confidence and motivation among instructors who try new ideas,

10. Help the staff within OTL to have an in-depth knowledge of new approaches as they emerge in order to help promote these ideas across the institution.

On a practical level, an assessment lab would require that the instructor has a working prototype of their assessment (i.e. all of the instructions, and actual questions if the assessment is a test or exam).

The role of OTL in facilitating an assessment lab would be to bring together instructors who want to test their ideas, with students and other experts who can offer meaningful feedback. OTL would also book space, and facilitate the briefing/debriefing before and after the assessment has been tested.

OTL would also need to identify a strategy for engaging a group of students who could provide meaningful feedback. The group would need to have appropriate background knowledge in the academic discipline. There would also need to be consideration for how to motivate students to participate – is this a volunteer opportunity, or would there be nominal compensation for their time?

Assessing Impact

Our working group repeatedly identified the need for data to support the university's understanding of our current state and to measure improvements over time. Many of the ideas in this document are informed by numerous stories that have helped us understand the experiences of students and instructors. With that, we have integrated an understanding of the university's values relating to equity, diversity and inclusion; academic integrity; and learner-centeredness. In addition, many exemplars of promising ideas are supported by scholarship.

Establishing metrics for tracking utilization and impact of alternate forms of assessment is essential to ensuring the university is truly playing a leadership role in innovation. We recommend the following questions as a starting point:

1. How many courses use alternate forms of assessment and how is this changing over time (e.g. as a result of the shift to emergency remote teaching)?

2. Are there measurable differences between courses that use these approaches and those that rely on traditional forms of assessment? This might include:

   - Course completion rates
   - The rate of deferred exams in these courses
   - Academic achievement of students in subsequent semesters
   - Graduation and employment rates as compared to the number of courses completed that use alternate forms of assessment
   - Students' self-reports about the quality of their learning, and retention of what they have learned over the long-term

Our working group strongly recommends the university assign a department or unit to answer these questions and track results over time. Results must be made readily available to the academic community, and data should be accessible for secondary analysis.

References

Oldenburg, B., & Parcel, G. S. (1992). Health Behavior and Health Education: Theory, Research, and Practice. *Annals of Internal Medicine*, *116*(4), 350. https://doi.org/10.7326/0003-4819-116-4-350_1

Appendix A: Assessment Exemplars

Two-stage assessments (Newton et al., 2019)

- Gen Newton biochemistry 2 (HHNS)
- Wendy Keenleyside (Molecular & Cellular Biology)
- Kate Stuttaford (Chemistry)
- Ashley Brott (MCB)

Student-designed questions (Crawford, 2020; Teplitski et al., 2018)

- Jamie Burr HK 4600 (HHNS)
- Jen Monk NUTR 4320 (HHNS)
- Prof. Keith Warriner FOOD 4310 DE
- FOOD 3260/3270

Scaffolding expectations (Lakehead U; Shepard, 2005)

- Graham Holloway HK 4340 (HHNS)

Teaching and assessing group work processes (Oakley et al., 2004)

- Bill Bettger NUTR 3390 (HHNS)
- Steve Brown HK 4240 (HHNS)
- Jacqueline Murray (History) esp. Enquiry Based Learning
- Neil MacLusky BIOM 4300 (OVC)

On-going feedback (Carless & Boud, 2018; Gibbs & Simpson, 2004; Henderson et al. 2019)

- Amanda Wright NUTR*4330 (HHNS)
- 4th year research courses (HHNS – David Dyck, David Wright; BIOM – Jim Petrick)
- Graham Holloway HK 4340 (HHNS)
- Lori Vallis HK 2270 (HHNS)

 Student choice and flexibility (Irwin & Heppleston, 2012; Pacharn et al., 2013)

- Kerry Ritchie KIN 3060 (Guelph Humber) (HHNS)
- Coral Murrant HK 3810 (HHNS)
- Bill Bettger NUTR 3390 (HHNS)

Simulation Exercises

- Ryan Gregory (IB)

 Large class peer evaluation

- Kerry Ritchie HK 2810 (HHNS)

Appendix B: Problem-Based Exam Questions

During the 2020-21 academic year, the COVID-19 pandemic made it impossible for most courses to assess students' learning through on-campus activities. At the same time, growing concern about systemic discrimination made the use of virtual proctoring software such as Respondus, troubling for many members of our academic community. Layered on top of this was a significant growth in concerns about academic misconduct.

In this context, we were aware that some instructors had come up with innovative approaches to their assessments. We asked students to help us identify courses that did not use Respondus, that provided take-home exams, and that were highly effective in assessing their learning. We particularly emphasized an interest in assessments where students were presented with a problem that they needed to analyze or solve. Below is a list of their recommendations.

Note that this list reflects student feedback and has not been confirmed with the individual instructors.

ANSC 4470 "Animal Metabolism" - Dr. John Cant

ANSC 4270 "Dairy Cattle Nutrition" - Dr. Mike Steele

ARTH 3340 "Studies in Renaissance & Baroque Art " - Dr. Sally Hickson

ARTH 2600 "Early Modern Art" and 1520 "Art Historical Studies II" - Dr. Christina Smylitopoulos

BIOL 1070 "Discovering Biodiversity" - Dr. Shoshanah Jacobs

BIOL 2400 "Evolution" - Dr. Ryan Gregory and Dr. Jinzhong Fu

CIS*3760 "Software Engineering" - Dr. Stacey Scott

FARE 2700 "Survey of Natural Resource Economics" - Dr. Qin Xu

GEOG 2210 "Environment and Resources" - Dr. Anna Stanley

ENGG 3080 "Energy Resources & Technologies" - Dr. Ryan Clemmer

ENVS 2030 "Meteorology and Climatology" - Dr. Scott Krayenhoff and Dr. Claudia Wagner-Riddle

ENVS 3090 "Insect Diversity & Biology " - Dr. Andrew Young

GEOG 1300 "Introduction to the Biophysical Environment" - Dr. Laura Brown

IDEV 3000 "Poverty and Inquality" - Dr. Ryan Briggs

MBG 3060 "Quantitative Genetics" - Dr. Andy Robinson

MBG 3660 "Genomics" - Dr. Charlotte De Araujo

MICR 2430 "Methods in Microbial Culture & Physiology" - Dr. Wendy Keenleyside

PHIL 2140 "Ancient Greek" - Dr. John Russon

POLS 2250 "Public Administration & Governance" - Dr. Tim Mau

PSYC3800 "Psych of Education" - Dr. Jennifer Lasenby-Lessard

STAT 2230 "Biostatistics for Integrative Biology" - Dr. Christina Caruso and Dr. Faisal Khamis

UNIV2010 "Anti-Discrimination and Anti-Oppression" - Joseph Pazzano

ZOO 2700 "Invertebrate Morphology & Evolution" - Dr. Alex Smith and Sheri Hincks