



Open and Affordable Course Materials Working Group
Report to the Provost's Advisory Committee on Teaching and Learning

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Executive Summary

Over the past year, the Open and Affordable Course Materials Working Group has raised awareness at Queen's about the potential of open educational resources (OER), and gained insights into students' and instructors' interests and needs in this arena.

OER are teaching, learning, and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. OER can be defined as including full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.

Early in its mandate, the working group agreed that it would be most appropriate to focus its work on open textbooks, as a high priority OER from a student perspective. At the same time, the activities undertaken were designed to provide insights relevant to OER more broadly.

The experiences of the past year suggest that there is substantial interest in alternatives to traditional textbooks at Queen's. The working group recommends building on the experience of pilot projects conducted in 2017-18 to continue to develop open textbooks and OER more broadly at Queen's.

The group sees this continual development of OER as a natural and essential element of considering how technology can best be leveraged to enhance the student learning experience. As seen in the pilot projects sponsored by the group, the move from a traditional textbook to an OER approach provides an opportunity to reimagine the course.

This report summarizes the working group's observations regarding OER opportunities, interest at Queen's, the experience to date with a set of pilot projects, strengths relating to OER, and matters for further consideration. It also recommends a strategy for moving forward, including principles to guide further development of OER at Queen's and several goals:

1. Develop organizational capacity
2. Develop an OER community of practice
3. Provide appropriate infrastructure and services

The working group's key observation is that there is significant interest in OER at Queen's and considerable strengths to build upon. As the university moves forward with developing a digital strategy, it will be important to address opportunities for providing open cost-effective course materials, for the benefit of students and their instructors.

OER Opportunities

The working group conducted an environmental scan that provided insights into current developments in the OER landscape, and in particular highlighted the early leadership of [BCcampus](#) and the more recent efforts of [eCampusOntario](#), which is developing an Open

Textbook Library and an Open Publishing Infrastructure with open source software from Pressbooks. Planning was also informed by working group members' participation in external events, such as the Open Education Ontario Summit, the Creative Commons Global Summit, the Canadian Roundtable on Academic Materials, and the OER activities of the Ontario Undergraduate Student Alliance (OUSA).

To facilitate Queen's community understanding of OER, there is now a website that highlights best practices for Queen's to build upon, as well as current activities and opportunities at Queen's: <http://guides.library.queensu.ca/oer>

OER interest at Queen's

To raise awareness of OER opportunities amongst the Queen's community, the working group provided a variety of learning opportunities and updates, including:

- A presentation was included in the Showcase of Teaching and Learning at Queen's, May 3, 2017, on [Building and Integrating Open Educational Resources to Support Your Teaching](#)
- The eCampus Ontario Open Textbook Call for Proposals was promoted and support was provided for interested faculty, June 2017
- David Porter, CEO of eCampusOntario, spoke on the open movement in education in a talk open to the Queen's community, titled [Rethinking: learning resources, learning experiences and recognition of learning](#), June 28, 2017
- The AMS coordinated Queen's students' participation in OUSA's advocacy week in January, including a [#TextbookBroke](#) campaign and promotion of an [Open Educational Resources Policy Paper](#)
- A workshop on [Building and integrating open educational resources to support your teaching and learning](#) was held on February 13, 2018
- A Queen's open access graphic was produced with a view to it being available to faculty and course developers to highlight the use of OERs in particular courses.
- Queen's Gazette stories:
 - [Thinking about course textbooks](#), April 17, 2017
 - [Opening the door to open education resources](#), October 2, 2017
 - [Creating open course materials](#), January 8, 2018

Interest in OER at Queen's was explored through several consultations with students and instructors, as follows.

The [Textbook and Learning Materials Focus Group Report](#) prepared by the AMS Marketing and Communications Office reported on a focus group conducted on April 7, 2017 to gauge students' experiences and opinions on textbooks and other associated learning materials, with a focus on the costs of textbooks and assessing if that poses a financial barrier. The common theme was students' desire for less expensive textbooks and learning materials. Respondents expressed desire for more effective learning materials that are helpful and fully integrated with the course.

The [AMS Academic Affairs Commission survey conducted in March/April 2017](#) included these results:

- When asked “To what extent do you agree with the following statement: The costs of textbooks pose a significant financial barrier (i.e. not buying a textbook because of the costs),” 60% of 427 respondents strongly agreed, 30% agreed.
- When asked about being required to pay an additional fee to access an online learning system (Top Hat, Blackboard, etc.), 79% of respondents indicated yes and 91% of those respondents stated it was tied to their grade evaluation.

A “snapshot survey” of two instructors on the Queen’s Kingston campus and three at the Bader International Study Centre provided insights on matters to pursue further in subsequent focus groups. Participants expressed doubts about the quality of open textbooks and the work/time required to create them.

Three discussion (focus) groups were held in April 2017 to secure feedback from instructors at Queen’s. The 17 participants were from a range of faculties and departments (Arts and Science, Business, Engineering, Health Sciences, and Education). While such focus group results should not be extrapolated to represent the views of all instructors at Queen’s, they provide insights on behaviours, experiences and opportunities that can inform the design and implementation of programs. The discussions provided insights on: instructors’ use of textbooks; degree of difficulty finding appropriate textbooks; prevalence of writing own textbooks; perspectives on incentives/recognition; perspectives on digitization; cost to students as a factor in textbook decision-making; perspectives on “open and affordable” textbooks; pilot project ideas.

A key takeaway of the instructor discussion groups was that most participants suggested that open and affordable textbooks are a given for the future (not just at Queen’s), and they simply want to know where, how and when they can obtain them.

Pilot projects

Given the interest expressed in the instructor discussion groups held in April 2017, the working group organized a set of pilot projects, with a goal of supporting a few OER champions and gaining experience to inform future directions. It was agreed that two options would be provided: review an existing open textbook, and create an open textbook.

Review an open textbook

For the reviewing option, members of the working group identified potential instructors by examining the list of textbooks that instructors had ordered with the Campus Bookstore and then searching for alternative open, high-quality, peer-reviewed textbooks. They found over thirty matches, and contacted the instructors associated with the Campus Bookstore order to discuss reviewing the open textbook. Three instructors agreed to do so:

- Ugurhan Berkok, reviewing *Principles of Microeconomics: Saylor*, by Rittenberg and Tregarthen and *Principles of Microeconomics: OpenStax*, by Taylor for ECON111.

- George Boland, reviewing *Intermediate Financial Accounting (Volume 1)*, Arnold et al and *Intermediate Financial Accounting (Volume 2)*, Arnold et al for COMM313.
- Nancy Salay, reviewing *forall x: An Introduction to Formal Logic*, by Magnus for PHIL361

The instructors were asked to review and compare the open textbook as they taught their course with the existing textbook during the academic year, and to consider whether they might [adopt it as-is](#) or [adapt/re-mix](#) it for use in a future course offering. They were provided with an “open textbook review and comparison rubric.” Upon completion of the review, participants will earn an honorarium of \$500. Reviews will be shared under a Creative Commons Attribution Non-Derivative ([CC-BY-ND](#)) 3.0 license.

To date, one instructor has completed the review. One difference noted between the open textbook and the current course textbook is the modularity and adaptability of the open textbook. In the latter case, the content can be easily divided into bite-sized pieces that can be re-mixed and re-ordered. When asked about adapting it or using it as-is, the instructor replied “I might use it next year, as a trial, or, more likely, I will distribute it alongside the current text so that students can use both as resources. This one is organised in a completely different way and I’m not sure yet if this is a better approach or not. I’d like to get some student feedback on it.” The instructor also noted advantages of the current textbook: “I wouldn’t want to lose the detailed discussions of my current text, but there is something to be said for getting quickly into a topic” and “I wouldn’t create my own material for this class. There are hundreds of texts out there and the one I currently use is excellent.” When asked about advantages in using the open textbook compared with the current textbook, the instructor answered “Cost to the student – I would like to minimise this as much as possible.”

Based on this thoughtful comparison and the interest in engaging students, the working group has concluded that it would be beneficial to provide another round of incentives in 2018-19 for instructors to engage in reviews as a way to further explore OER opportunities.

Create an Open Textbook

The working group issued a call for proposals in September 2017, inviting instructors to get involved in exploring OER through the review option described above or by creating/authoring a substantially new open textbook to support an upcoming course/program at Queen's. In the latter category, applications were encouraged for large undergraduate courses and/or courses with high-cost traditional ‘closed’ textbooks. The call for proposals also referred interested individuals to an essay by Tony Bates: [Writing an online, open textbook: is it worth it?](#) A \$7,500 was offered per course. The successful proposals to create an open textbook were:

- Ryan Martin, Physics, Engineering Physics & Astronomy, developing a new open access textbook for introductory physics, to be used in PHYS 104/106.
- Peter MacPherson, Department of Pediatrics, Faculty of Health Sciences, developing The QPeds Pediatrics Textbook: An Open Textbook for Undergraduate Medical Students which could serve as the primary reference for MEDS 122 (Pediatrics and Genetics) and

MEDS 444 (Pediatrics Clerkship). It would also contain content relevant to seven additional first and second year medical courses.

- Meghan E. Norris, Psychology, developing a textbook for PSYC204 (Applications and Careers in the Psychological Sciences)

In addition, Sidneyeve Matrix was successful in her proposal to the e-Campus Ontario eCampus Ontario Open Textbook Call, to fill a gap in the existing OER textbooks on design thinking.

The three pilot projects are currently at the planning or development phase. They are scheduled to be published and integrated into student courseware in the Fall of 2018 or Winter of 2019. Below is a summary of progress and lessons learned, to date.

Support provided (to date):

- Prepared [web guides](#), templates and other tools to support OER adaption and textbook creation
- To facilitate the project-planning phase of the textbook creation process, the Scholarly Publishing Librarian and Copyright Manager met with each of the faculty project leads. Taking a flexible approach, responding to the needs of each project, they:
 - Reviewed the proposal and identified required supports from across campus (e.g. librarians, instructional designers, copyeditors etc.) at key points in the textbook creation process
 - Previewed and sought feedback on existing **web guides**, templates and tools
 - Demonstrated the technical infrastructure for building Open Textbooks provided through eCampusOntario and Ryerson University
 - Identified mutually agreed upon check-in points and timelines to publication and distribution, promoting the successful and timely completion of the project
 - Established a collaborative, team-based approach towards shared learning and expertise, necessary to establishing an ongoing OER community of practice at Queen's.

Lessons learned:

- *Support with planning a new textbook project is valuable:* The level and extent of project planning support for creating and integrating OERs into their teaching may vary depending on the level of expertise of the faculty member(s). Effective, best practise approaches should be explored at the start-up phase and integrated throughout.
- *A team-based approach is highly effective:* Leverage the combined input of educators, content creators (both students and faculty), librarians and pedagogical and instructional designers at key points in the process. This will ensure a cohesive approach towards the development of high quality learning materials.
- *Deliver practical support with textbook creation:* Project participants identified a need for practical support in the following areas:
 - Issuing a call for co-authors: *provide a template for me to adapt*

- Finding high quality open education resources: *help me find high quality images, readings, AV and other learning resources appropriate to my discipline*
- Rights and permissions: *help me understand my rights as creator, and user of other people's content*
- Creating derivatives: *when I find existing OERs how can I adapt them for my own use?*
- Accessibility and inclusivity: *what guidance is available?*
- Using my open textbook in the flipped classroom: *practices and approaches?*
- Using textbook authoring platforms such as Pressbooks: *get me started*
- Keeping textbook content up-to-date: *this is key*
- *Provide robust and versatile textbook authoring and publishing platforms that can integrate a comprehensive range of learning resources, both text and non-text-based: Two of the three pilot authors thought that the eCampusOntario platform (Pressbooks) would meet their needs (psychology and pediatrics), although one author (a physics professor) thought that the platform would need to be modified to meet his publishing needs:*
 - “One concern with Pressbooks is that the content does not exist in an organized manner (e.g. organized into folders containing text for chapters, problems, solutions, editable images, etc.). One thing that might happen is that we have to have 2 versions of the textbook, one on GitHub with all of the inputs, and one on Pressbooks with everything integrated; the danger will be that we won't have the two versions in sync.... The success of this textbook will be whether it facilitates presenting the course in a flipped classroom. ” (Ryan Martin, Physics, Engineering Physics & Astronomy).*
- *Funding provided for these projects: Two of our three pilot groups have matched grant funds with supplemental resources provided by their departments to cover staff costs. This indicates that the funds provided are not sufficient for the successful completion of the project. The \$7,500 award was used to cover some staff costs: faculty authors, in-kind faculty peer-reviewers, in-kind instructional designer, copyeditor, student editors, content creators (e.g. question bank, problem-banks etc.)*
- *OER projects can provide an opportunity to reimagine the course: In all three pilot projects, the authors are aiming not to simply replicate a traditional textbook in an online open format; they are considering the overall approach to the course. For example, Meghan Norris took the opportunity to apply a flipped classroom model to her course delivery.*
- *OER and open textbook creation provides an invaluable experiential learning experience for students: Each of our textbook teams are employing students (graduate and/or undergraduates) to engage with the project in innovative ways as co-authors, reviewers and evaluators of content. This is a reflection of the enthusiasm for these types of projects on campus and the capacity they provide to encourage new and creative learning experiences.*

How will success be evaluated?

A key outcome these projects will include an Impact Assessment Plan, describing how use of the new open textbook influenced both the experience of the instructor and the learner. Impact measures may include:

- Impact on teaching and the classroom experience - did the textbook make the course easier to teach? Did it have a positive impact on student grades?
- Actual cost savings for students compared with purchasing the commercial textbook.
- The number of students who accessed and engaged with the open textbook e.g. number of downloads, views etc.
- Evidence of re-use by other educators, both at Queen's and beyond, e.g. derivative works.
- Student, co-author, instructor testimonials and use-cases describing their experience with using the textbook.

Strengths relating to OER at Queen's

How well positioned is Queen's to advance the use of OER? The working group observes that Queen's has several distinctive strengths to build upon:

- *Highly engaged students and instructors:* As described above, at a minimum there are pockets of strong interest in OER at Queen's. It is anticipated that this interest will continue to grow as champions share their experiences.
- *Well-established online course environments and support:* In recent years, Queen's has leapfrogged other institutions in its development of online courses. There are strong educational development teams across the faculties, connected with central supports in the Centre for Teaching and Learning, ITServices and the Library. This support network will be key to the adoption or creation of OER.
- *Successful integration of online course readings:* Many instructors have taken advantage of the opportunities provided by the Library's e-reserves service to provide a range of online readings for a course. This experience provides a useful base to build upon for service offerings supporting the use of alternatives to traditional textbooks.
- *Open publishing services:* The Library's information resources strategies include advancing sustainable alternatives to prevalent commercial publishing models. Again, this experience provides a useful base to build upon for service offerings supporting the use of alternatives to traditional textbooks.
- *Supportive Campus Bookstore:* The Campus Bookstore at Queen's is owned and operated by students. It is a not-for-profit corporation that endeavors to distribute required course material at the lowest possible price to students. In other words, it is not in competition with the OER movement but rather is interested in supporting it.

Matters for further consideration

There are a variety of questions left to explore regarding OER and their adoption at Queen's:

- Many instructors will continue to use commercial textbooks for the sense of their guaranteed quality and the simplicity of using them. Taking new approaches requires time and support.
- What role do commercial offerings play in this landscape? For example, [Top Hat](#) is marketing heavily to Queen's instructors, and there have been questions about whether Queen's should purchase an institutional subscription. Top Hat provides additional value to existing OER, and helps institutions scale and support faculty in switching to OER.
- What platforms will instructors find most suitable, and what forms of support will be needed at Queen's? The Pressbooks platform available through eCampus Ontario may not offer the flexibility and interactivity desired by some instructors.
- As with all aspects of online learning, support for OER will need to be factored into the university's digital priority-setting and decision-making.

Moving forward

Queen's goal of enhancing the student learning experience includes the objective of further integrating technology into the delivery of course content where it enables improved learning. The use of OER supports this objective, in that they provide equitable, broad access to learning resources that are tailored to courses and free of cost barriers.

The working group recommends the continued exploration of OER opportunities, guided by the following principles and goals.

Principles

1. Course materials must be high quality and offer value to students.
2. Instructors are the ultimate decision makers for selecting course materials.
3. Instructors consider the cost for students when selecting course materials, and explore and utilize the most cost-effective forms of delivery.
4. Course materials are selected with a view to increasing the accessibility of content for students with disabilities.
5. Copyright is fully respected and fair dealing provisions are exercised in providing and using course materials.
6. Selections of course materials make the best use of available content, including licensed or purchased resources as appropriate.

Goals

1. Develop organizational capacity
 - i. In developing Queen's digital strategy, provide effective coordination and decision-making mechanisms that support the strategic importance of OER.

- ii. Include in the role of the Scholarly Publishing Librarian the responsibility to coordinate the development of open textbook services in partnership with the faculties, their course developers, liaison librarians and the Centre for Teaching and Learning.

2. Develop an OER community of practice

- i. Implement a fuller portal/online source of information, drawing upon and augmenting the web guide developed in the pilot phase. Include:
 - Engaging stories, e.g. reflections on pilot project experiences (OER could stand for Open Educational Reflections)
 - 'How to' guidance for Queen's instructors wanting to develop OER
 - Links to existing sources of OER
 - A forum through which interested instructors at Queen's could interact, share their experiences and information, or develop collaborations to pursue specific projects
- ii. Create an informal advisory group including pilot project participants, student representatives, and other champions to:
 - keep initial momentum going
 - stimulate further dialogue on issues and opportunities as they arise
 - encourage more instructors to contribute ideas and participate in the online portal
- iii. Facilitate informal knowledge sharing amongst instructional designers and others involved in course development, for example through:
 - periodic gatherings and workshops
 - roundtables with instructional designers

3. Provide appropriate infrastructure and services to support the creation, adaptation and adoption of OER

- i. Continue to participate in collaborations that provided hosted, secure infrastructure for OER, such as Pressbooks supported by eCampusOntario
- ii. Provide incentives that reflect and recognize instructors' efforts on OER, recognizing that time and concerns about promotion and tenure are the biggest barriers to instructors' interest in participating in these activities
- iii. Provide training opportunities and advice for instructors
- iv. Explore providing print-on-demand capabilities at Queen's (e.g. one chapter at a time, entire textbook, coil binder format)

"I've been bursting, and can now share. I was granted funds from @queensu @QueensULibrary to create an OPEN ACCESS text on Applications & Careers in the Psychological Sciences. SO EXCITED! Geared toward entry-level students. More details to come! #HigherEd #OpenAccess #psychology"

– Meghan Norris on Twitter