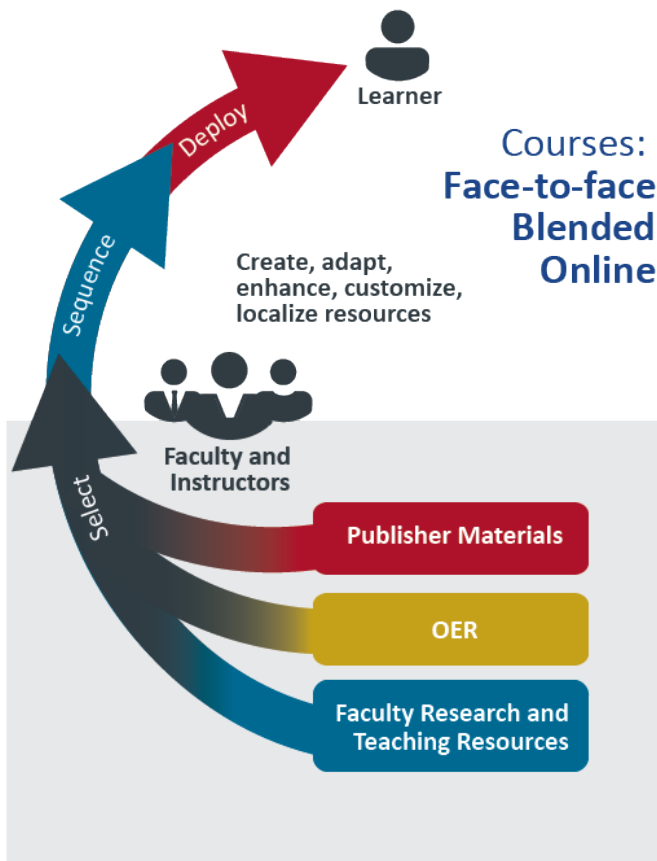


DISCUSSION PAPER:

AN INFRASTRUCTURE FOR DIGITAL LEARNING RESOURCES



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The purpose of the paper is to engage the SFU community in a discussion about how broader and more integrated access to digital learning resources might enhance the design and operation of programs and courses at SFU. The paper also seeks to identify the potential benefits for students, faculty and the institution associated with the use of an integrated digital infrastructure for learning resources at SFU. We invite your response to this short discussion paper.

CONTEXT

Conversation overheard in the *Starbucks* coffee line at SFU on Thursday, January 15, 2015, “...this course has a lot of versions and each one has a different textbook. How do we choose? What do I do?”

The choice facing students in this conversation is common as is the choice for faculty and instructors in determining which learning resources or textbooks best fit the learning goals for their course curricula. This paper asks whether there is a new, more agile process for identifying, selecting, assembling and distributing learning resources in digital formats that can support both effective teaching and learning and efficient, low-cost provision of instructional resources for students. The paper also asks whether new practice models that build on open pedagogies, open educational resources (OER) and open textbooks could be more aggressively explored at SFU.

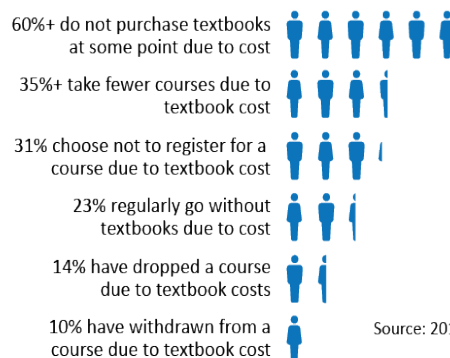
When textbooks were physical printed books students had options: buy new, buy used, share with a friend, read the copies on reserve in the library, or don't use the textbook at all. With new publisher models being introduced, access codes for password-controlled course resources is a new reality for instructors who choose to use publisher resources with their students. A third option, supported by SFU students (Hill, 2014), is available through open access materials and the BC Open Textbook program.

According to research conducted by Allen (2010) for the Student Public Interest Research Groups (StudentPIRGs), the average US student spends \$900 on textbooks each year. At our institution, SFU Student Services recommends that students budget \$1000 per semester for books and supplies (SFU Student Services, 2014), which could expand to \$2000-3000 per year based on a student's enrolment pattern. Textbook costs are high and getting higher, and their rise over the past 10 years has been more than three times the rate inflation, according to US data (Jamrisko & Kolet, 2013).

Research from the 2012 Florida Student Textbook Survey (Florida Virtual Campus, 2012), in which over 22,000 students participated, suggested a direct relationship between textbook costs and student choices about which courses to take.

According to a September 2014 survey conducted by the SFU Bookstore (SFU Bookstore, 2014), 35% of students reported they did not purchase required textbooks for their courses. The 2012 annual SFU student survey (SFU, 2012, p. 44-45) reported that only 59% of students purchased all their required materials, with 76% reporting that textbook costs are too high.

A relationship between textbook costs and student decisions about which courses they will take



Source: 2012 Florida Student Textbook Survey

Changes are taking place in the existing educational resource marketplace as new business and technology strategies emerge. Publishers have created their own learning resource delivery systems, usually based on US servers, which students gain access to directly using purchased codes. E-books and e-readers are also available for mobile phones and tablets. Open textbooks are available to instructors under an open-source license and provide free digital access to learning resources, with low cost printing and customization opportunities. The implications for of these technological developments include changing practices for bookstores (Roach, 2014), and a need to harness digital technology more effectively in teaching and learning to benefit both students and instructors.

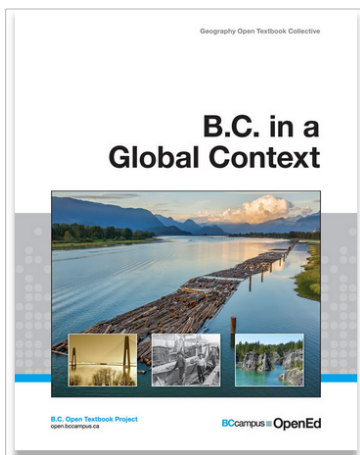
StudentPIRGs (2010) research found that textbook affordability solutions must also satisfy a wide range of student preferences:

- Students were split between print and digital – (leaning toward print) - a combination may be best.
- Most students prefer to rent some books and buy some others
- Traditional cost-reducing options (such as used books) only appeal to a subset of students, and therefore cannot reduce much of the overall market cost
- Open textbooks can reduce costs for all students by up to 80% over market pricing, and have potential long-term sustainability

Therefore, any solution that seeks to reengineer traditional instructional resource models must reduce costs and appeal to a wide range of students. Recommendations from the StudentPIRGs (2010) report included the following action pathways, to which we have added some referenced examples:

- Colleges, universities and governments should invest in open textbooks and other sustainable models (e.g. BCcampus, 2015a)
- Faculty should use open and other affordable textbooks when possible (e.g. OpenStax College, 2015; BCcampus, 2015; Koch, 2006)
- Publishers should develop models that can produce high quality, reasonably priced books (e.g. Algonquin College eText Initiative, 2015)
- Students should spread information about open textbooks (e.g. Hill, 2014)

Some of these action pathways are playing out around us on SFU campuses, and this discussion paper asks whether an intentional pilot project would allow us explore and evaluate the benefits of an integrated digital resource strategy with SFU faculty and students. But there is more that can be done.



Examples of co-creation and localization of instructional resources by faculty teams have been demonstrated within the British Columbia higher education system.

In 2014, a BC Geography textbook “sprint,” in which faculty members from multiple institutions collaborated for a week at the University of British Columbia, produced an openly-licensed first year geography textbook localized for BC students (BCcampus, 2015b). This open textbook is currently available for free to faculty and students in multiple formats including online, PDF and mobile formats for tablets.

An integrated resource solution for SFU should also allow for these types co-creation and localization activities to be initiated by faculty teams, with technical support from the institution’s service units.



OPPORTUNITY

A pilot initiative to explore new learning resource models could address a number of goals at SFU, including:

- Reduce instructional materials and textbook costs for students while providing perpetual access to resources, rather than having them expire after 180 days (which is often the case in publisher provided instructional resource models)
- Provide a technical infrastructure, compatible with Canvas, for faculty to select from digital resource collections that include their own research and instructional resources, open educational resources, open data sets, library resources, publisher textbooks and resources
- Support multiple platforms and strategies for the distribution of digital resources for instruction including mobile, desktop devices, and on-demand printing capabilities
- Ensure that Freedom of Information and Protection of Privacy ACT (FIPPA) regulations are observed when students gain access to publisher provided online materials
- Modernize the functions of the SFU Bookstore with respect to procurement of learning resources, the delivery of resources to students and faculty, and payment mechanisms

The Algonquin College *eText* Initiative provides one existing model of practice for SFU to consider. Algonquin has been operating an e-text program since September 2013 supported by the college's Learning and Teaching Services (LTS) team. The initiative demonstrated savings to students of up to 40% during its initial implementation phase with a subset of the institution's courses. Algonquin is targeting a 100% integration of e-textbooks at the college by 2016, and is using a phased strategy to improve the program, add additional resources and increase integration with existing student and technical services on its campus.

Throughout its process of adopting the integration of digital resources, Algonquin Learning and Teaching Services (LTS) staff worked closely with faculty, students and its bookstore to plan and execute its *eText* strategy and implementation processes. How might the SFU Teaching and Learning Centre (TLC) be involved in a similar manner to support a pilot project on our campuses?

While the Algonquin model is built on a strategy that works with publisher provided digital resources, the opportunity at SFU could be expanded to support and distribute both faculty-developed resources and open educational resources, congruent with student wishes, and with government directions for OER.

Open access journal resources are available from the SFU Library, and open textbooks from the BC Open Textbook Project. There are also other open digital repositories available across the Internet including OpenStax College, OER Commons, and Washington State Open Course Library, as examples. Therefore, an integrated strategy for SFU could provide a new style of infrastructure and support systems that allow for the assembly and distribution of instructional resources from all viable sources, including:

- Faculty or department developed resources
- Open educational resources, open data sets and open textbooks
- Library resources and licensed digital collections
- Publisher-sourced digital textbooks and ancillary resources

Designing an integrated resource environment that utilizes multiple sources for teaching and learning resources would also require us to consider a technical infrastructure, tools and service structures to support the approach. Is Canvas the key component of the technical infrastructure, and/or are there other complementary technical options?

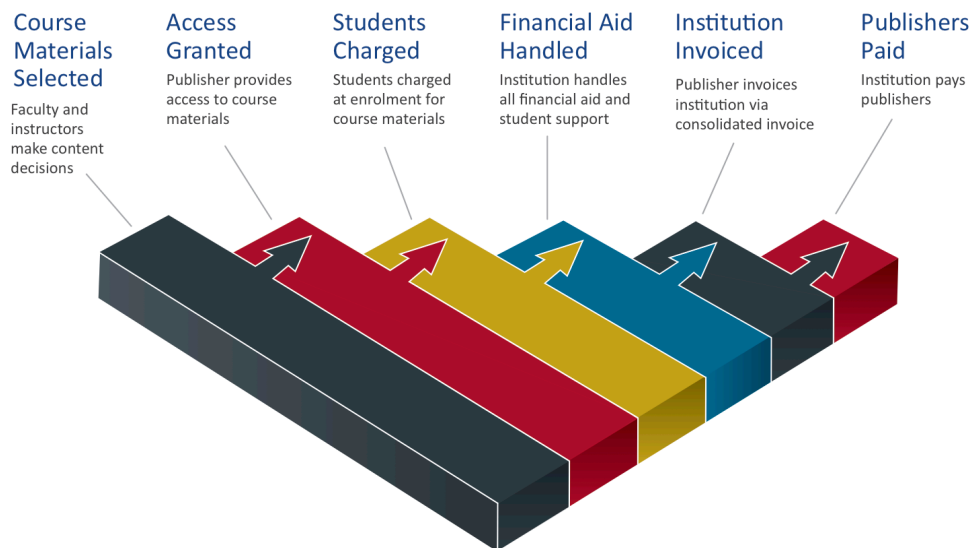
POTENTIAL VALUE AN INTEGRATED APPROACH FOR THE SFU COMMUNITY

The table below suggests some of the value propositions that arise from an integrated digital resource strategy that combines faculty-developed resources, resources from the SFU Library, the BC Open Textbook Project, and the open commons across the Internet, as well as publisher resources.

Faculty or department resources	Open resources	Publisher resources via Bookstore
<ul style="list-style-type: none"> Teaching resources for SFU students based on research or expert knowledge of the subject domain by SFU instructors Updated regularly as a part of teaching function Malleable and adaptable to SFU students based on their needs Maintained and updated by the author/s to meet new needs Ability for faculty to self publish locally designed resources and teaching materials to the SFU digital collection Collaborative authoring, revising and remixing opportunities with colleagues to suit student needs Localization and customization of resources to better meet the needs of SFU students and faculty. 	<ul style="list-style-type: none"> Available in many subject domains and disciplines Free to reuse, revise, remix, redistribute, and retain through Creative Commons (CC) license provisions Collaborative authoring, revising and remixing opportunities to suit existing or emergent student needs Positions SFU Library as a centre for collections of open access, discipline-specific OER Associates SFU more closely with BC Open Textbook Project Support for new models of teaching practice Support for open pedagogies that include students as co-developers and co-researchers 	<ul style="list-style-type: none"> Available in most subject domains and disciplines Lower cost for students and price capped at 2% increase per year All students have access to required resources for courses Retain and print rights provided Latest versions available through digital collections model maintained by publishers Ability for faculty to select individual chapters to produce custom digital course packs Privacy regulations respected (FIPPA) Analytics available for some online resources used for teaching and learning Tech support provided by via Bookstore staff

A refreshed Bookstore model

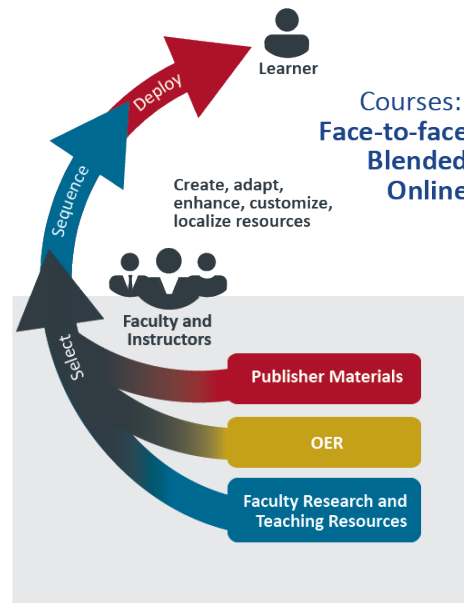
The SFU Bookstore has proposed a new resource delivery system as a way to address digital access and lower resource costs for students. Its key features are outlined using the conceptual illustration below.



An integrated infrastructure for the creation, selection and assembly of learning resources

The bookstore model is aimed at the dominant commercial model of providing publisher textbooks and ancillary resources to students. However, it is important that all sources of learning materials be considered in an SFU digital resource strategy. An ideal architecture would allow for the selection and assembly of faculty provided resources, publisher resources and open resources from across the Internet in a manner that satisfies course requirements and creates an engaging and effective learning experience for students.

Further, the digital resource infrastructure should satisfy the needs of face-to-face, blended and online classroom models and provide connections to resources through the Canvas learning management system (LMS). In addition a virtual digital bookshelf should provide content and ancillary resources to students using desktop computers, laptops or mobile devices.



Extending the functionality of a digital resource infrastructure could also provide feedback and evaluation streams from students and faculty, providing analytics that could be used to better assess the utility of digital resources, as well as identify areas for improvement or the development or acquisition of additional or improved resources.

A digital infrastructure that integrates OER along with faculty and publisher resources would also provide opportunities for localization and customization of resources to better meet the needs of SFU students and faculty, as well as provide a platform for collaboration among faculty or program teams. Co-research and co-creation of learning resources could provide a powerful new strategy for building and improving SFU courses. The “dynamic content authoring process” operated by Williams (2005) at the University of Northern British Columbia and the *ChemWiki* (2015) project designed and operated by a faculty members from the University of California (Davis), provide excellent examples of practice models that demonstrate an active learning and agile resource development environment supported by both faculty and students.

HOW DO WE RESPOND?

Some specific questions:

1. What could we do in the short term at SFU to explore and evaluate an integrated digital learning resource infrastructure for students, faculty and instructors?
2. Who would need to be involved in an advisory capacity to guide and evaluate the pilot project?
3. How would faculty and instructors be identified to participate in a pilot project?
4. What research and metrics would be key to guiding the pilot evaluation?
5. What resources would be required to conduct a pilot program and its evaluation?
6. Could we conduct the pilot and evaluation process in an agile, iterative manner that would allow us to more broadly implement the successful components as they are identified?

We’d like to hear from you → <http://flexed.sfu.ca>

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