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In 2012 BCcampus began an ambitious multi-year open textbook project. To succeed, we needed to create openly licensed textbooks. The challenge was creating textbooks that straddled both the analog & digital worlds. To do this, we turned to WordPress & the PressBooks plugin.

This is an archive and a place to try out PB.

Pressbooks: Putting the Press back into WordPress

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." Hewlett Foundation

Rationale for choosing Pressbooks

Caveat

This document was originally created by Clint Lalonde in 2012 to support the BC Open Textbook Project. It was originally an internal document and, as such, may be lacking some context. Some of the original requirements and assessments may not be valid at this time. As such you should consider this a historical document from 2012 and recognize that much has changed in the open textbook authoring and publishing world since then. Some of the analysis may be quite dated. It is posted here as part of the 2018 PressED Twitter conference.

Open Textbooks: A web first approach

While the technical goal of the project is to produce "textbooks" in a number of technical formats (HTML, PDF, Print on demand & epub), our approach to content development is to enable a

"web-first" production process that emphasizes creating well structured HTML content that can then be transformed into other formats, as opposed to creating other formats that can then be transformed into HTML.

There are a number of reasons to adopt "web-first" thinking for our workflows and publishing procedures.

- The underlying technologies which drive the web (HTML, CSS, Javascript) are stable and well supported when compared to the technologies used in eBook publishing.

- Web browsers are familiar technologies to our primary users (students & faculty) compared to eBooks.

- The web is much more device, platform and format agnostic compared to many of the current eBook development and publishing tools.

- There are tools to transform well structured HTML content in many other format types that will work in eReaders.

- The web has much broader support across platforms and devices for multimedia content than the current standards of eBooks allow.

- The web is flexible enough to allow for additional experimentation in ways to extend the notion of what a "textbook" is.

On this final point, the very notion of what a textbook is is

changing. More resources are being made which are web-enabled first, print enabled second to take advantage of the affordances of the web. And while new technical formats and devices are emerging to support the publishing of eBooks (which are self contained and discrete packages of content that require specialized devices or software such as Kindle, Kobo, iBooks, etc to read) the area of eBook publishing is under incredible churn and lacks the types of standardization that the web has developed over the years. While eBooks are an important output component to this project, they still present barriers for users.

- eBooks require third party readers
- standard formats (such as epub) are not supported by all eReaders
- fully interactive eBooks are very often platform or vendor specific and are not universally accessible on all devices and platforms.
- epub2, while making features such as flow-able text possible, does not offer much additional functionality beyond what a well constructed web based version of a textbook does.
- the epub3 standard, which will make an eBook a much more interactive and media rich experience, is not fully supported by many of today's epub readers.

Finally, affordability and access to learning resources are the primary drivers of this project. While the web does have barriers, it still provides the most affordable, accessible access to learning resources when compared to either eBooks or print books. This

supports the notion that the open textbook project support a "web-first" approach to content development.

Recommendations

To meet this goal of producing textbooks that support a web-first publishing workflow, I recommend the following:

- To proceed with PressBooks as our primary textbook authoring platform.

- To maintain a close relationship with OERPub and Connexions and monitor the development of those authoring platforms.

- To remain open and flexible to support experimentation of other tools as may be suggested by faculty & authors taking part in the OTB project while remaining mindful that internal resources to support these type of experimental projects is limited. Therefore, we should both encourage, but limit, the number of experimental projects outside of PressBooks that we support.

PressBooks and our requirements

While PressBooks does not meet all of our requirements, there are numerous benefits to PressBooks. First addressing our specific requirements, PressBooks;

- produces a well formatted website for each book,

- provides a very clean user interface experience that works well across many mobile devices (tablets & phones) & standard web browsers,

- outputs to ePub (2), print-ready PDF, and XHTML (both as a website and as zip package), as well as mobi (Kindle), InDesign and WordPress XML,

- has web based authoring with an integrated WYSIWYG editor (TinyMCE) which can be extended

- has a fairly intuitive user interface that should reduce the difficulties for faculty in creating content, especially for those who have used WordPress before,

- is fully open source and, while the business model for sustainability is evolving, does have an emerging user and development community committed to the project,

- supports open licenses,

- provide a print ready PDF document that can be exported to a Print on Demand service,

- has version control for content,

- with the web version, produces a table of contents that stays with the student regardless of what page they are on & provides quick navigation around a book,

- allows for book specific metadata, and

- can be made citation ready with third party

extensions, such as Dublin Core and COinS extensions.

Additionally, there are other benefits and possibilities that choosing PressBooks enables, including:

- a separate website for each book and discrete urls to content in the book which faculty can use to direct students to specific pieces of content in a book,

- some integrated social features which allows sharing of content on social networks,

- the support of vibrant WordPress OS community and ecosystem for additional plugins and functionality,

- is fairly lightweight in terms of technical hosting requirements and should be sustainable and supportable by a fairly small technical team,

- some collaborative authoring capabilities based on user roles,

- partnering with a project team that has proven to be approachable, responsive and flexible to our needs.

- BCcampus also has in house expertise with WordPress and the underlying technologies, meaning we can actively participate in development of both the plugin and the development community.

- there are also a number of institutions in BC already using WordPress in some capacity and by choosing a platform built on WordPress allows BCcampus to become active participants, contributors and leaders

in the development of a robust WordPress community in BC higher education.

- finally, supporting PressBooks means we are supporting a Canadian based WordPress based development project.

What PressBooks is missing from our requirements

- HTML 5 output
- Import from Word & HTML
- Robust collaborative authoring features, although a book can have multiple authors, concurrency and real time collaborative editing are not supported.
- Textbook specific features.

PressBooks future development: our "to do" list

1. Mechanism to put Creative Commons license on every post/page for all output formats

    a. ePub export creates a copyright page (need to be able to customize this)

2. Unlock the locked export directory. Output file types (PDF, ePub) need to be publicly available. Current architecture locks away ePub/ PDF documents.

3. Search contents of a book on the web hosted version (PDF and ePub readers have search capabilities built in)

4. Re-theme the opentextbc.ca home page

5. Video embeds render in the web version, but export to other format strips video out. Need to replace with a link to video.

6. Improve Math support (ideally support for MathML, but at very least work with MathJax/LaTeX which relies on shortags which works in browser, but print plain text in ePub/PDF exports

7. Develop textbook-specific themes (for web, ePub and PDF output and, perhaps other export formats) including styled asides, pullquotes, info boxes, Q&A, Learning Outcomes, and chapter summary (these requirements will need to be gathered based on research into existing textbooks)

     a. Modifying the TinyMCE editor to add some of these features

8. Import from HTML

9. Import from Word

10. Index feature for ePub/PDF that creates an index and:

     a. puts it at the end of an ePub/PDF

     b. is linkable in ePub/PDF

     c. added index automatically to ToC

11. Glossary requirement

     a. compiled into page at the end of an ePub/

> > PDF
> >
> > b. is linkable in ePub/PDF
> >
> > c. added glossary automatically to ToC

> 12. Create a standard PDF output that support Print on Demand workflow (may require modification to PressBooks)

Other platforms

Other platforms that were looked at for authoring included:

Connexions (and OERPub)

While Connexions is a powerful platform that meets many of our requirements, there are some limitations to considering it as our primary development platform

> 1. It is a US-based hosted service which would require a Privacy Impact Assessment to be completed which may affect the timelines of the project.
> 2. The current user interface is confusing.
> 3. Licensing is limited to CC-BY.

However, there are many reasons to stay closely connected to Connexions, including:

> - an upcoming release (Fall 2013) of a new Connexions platform that greatly improves the platform including:
>
>   - A more robust set of import and

transformation tools for remixing content, made possible by OERPub.

- ◦ A textbook specific front end editing tool (again, OERPub) that is user friendly and has textbook specific features built into the toolbar.

- ◦ Native HTML 5 output.

- OpenStax College project, which is an offshot of Connexions and is currently producing some very high quality open textbooks.

- A library of existing openly licensed content that can be easily incorporated into textbooks we author.

- These are OER and open textbook projects that are being driven and directed by academic institutions, and there is some value in being closely aligned with other academic projects.

BookType

Also an Open Source project that is very similar to PressBooks in terms of features and usability, the primary reason for not choosing BookType is the lack of internal knowledge at BCcampus to support the project. The product is built in Python and PostgreSQL and, while we could develop the technical expertise to host our own instance, it would be n additional barrier that could delay the project.

Mediawiki

MediaWiki does have some plugins that can output ePub and PDF documents, but the website does not provide a mobile friendly reading environment which is, perhaps, the biggest drawback of the platform. It works too much like a web page in a mobile device, compared to the mobile reading experience of PressBooks. Additionally, editing wiki content may prove to be a bit trickier for novice users than using a WYSIWYG editor. Mediawiki also lacks native book metadata features, although these may exist within the Mediawiki ecosystem. However, we may want to make this available for some to experiment with, specially for those who may wish to support multiple author content creation where the content changes are extremely dynamic (ie – student created textbook that may change from year to year) or for a project that wishes to remix a book from the WikiBooks library.

Other tools

We also briefly looked at other authoring and publishing tools including AcademicPub, Active Text, DynamicBooks, Habitat (by Inkling), Open Monograph Press (from SFU), Pandamian and Annotum. Cursory reviews of these platforms showed that they were not suitable authoring tools for this project for a number of reasons. Of these tools, Pandamian appeared to be a potential contender and have the output capabilities we were looking for. Like PressBooks, Pandamian is an extension of WordPress. However, testing of Pandamian produced errors on ePub, mobi and PDF outputs. And while the tool empathizes

ease of use with a sparse, stripped down user interface and limited feature list, it is a bit too stripped down for our use case.

PB as a Open Resource Hub

In sitting down to think about what a regional geography of British Columbia (BC) might look like, the ideas in the room were as diverse as the people there. However, we all agreed on one thing: a traditional textbook format was not something that would fit the scope of the project that we had been set. Regional geography is often considered to be an inwardly focusing geographical perspective with analysis pertaining to local networks and drawing on isolated contextual examples. So what did regional geographies of BC mean to us as a diverse group of geographers?

An interactive or media element has been excluded from this version of the text. You can view it online here:
https://pressbooks.bccampus.ca/pressed/?p=31

The discussion generated two themes: the first, illustrated by the Regions of British Columbia map (see Figure 1), comes from an understanding that BC is an incredibly diverse place. There are vastly different physical features of landscape, from temperate rainforests to deserts to beautiful boreal forests in the north.

The second theme is the importance of natural resources. BC's rich natural resources such as forestry, fishing, metals, minerals and natural gas not only provide for a vibrant local economy, but make the province a key part of Canada's economy in relation to the global marketplace. If you put "British Columbia Canada" into a Google search, you'll be offered a snapshot of some of the issues relevant here in BC, but whose effects are felt across the globe.

The main scope of the book is, therefore, to apply the fundamental geographical approach of understanding our globally changing world by looking at the local processes. These local processes and events are intrinsically linked to the same processes and events elsewhere. For example:

- Mining and its effects are a global issue and we can see how these unfold in BC.

- The recent apologies to First Nations peoples on the residential school issue are similar to events that have occurred in the US, Ireland and Australia.

- Processes of urbanization, a phenomenon that people all over the globe are experiencing, can be seen in Vancouver with our discussion of the city's development and its rating as the second-most

expensive city in the world to purchase a home.

Geography students, indeed all first-year students, need to know and be able to critically assess their own contexts and environments in order to properly engage with our continually globalizing world.

A YouTube element has been excluded from this version of the text. You can view it online here: https://pressbooks.bccampus.ca/pressed/?p=31

The People of BC

The story of British Columbia is also one of continuous settlement, from the ancestors of the Aboriginal peoples of BC who crossed the Bering Strait 10,000 to 12,000 years ago to

the first settlements along the Pacific coast 5,000 years ago, with inward and southern migration throughout the province. European contact and settlement came relatively late in the "age of exploration" and is a familiar story of people in search of resources.

BC is home to an incredibly diverse population including 203 distinct First Nations and Métis groups. Other Canadians can trace their roots to Europe, Asia, Africa and Middle Eastern descent, and an increasing number of recent immigrants are arriving from places such as India, China and Iran. In 2013, BC welcomed 36,161 international immigrants (Government of British Columbia, 2013). All the stories of settlement connect the land of what is now British Columbia to places elsewhere.

The Book

Chapter 1 Urban Settlement in British Columbia charts urban settlement patterns in BC up to current urbanization trends. The intention is to give students an understanding of how BC has been created through, what Doreen Massey (British social scientist and geographer) calls, a global sense of place. How is it that a place is different from other places? Especially one so connected to the global economy? It is through understanding differences, both within BC and without, that the values and diversity of the province begin to shine through. The case studies contained in this chapter offer insights into contemporary socio-ecological processes concerned with sustainability. In one case study, we look at a history of social planning in Vancouver to see what historic decisions have

impacted the city and how economic, social and environmental interests are a series of ongoing complex, and often competing interrelationships.

Chapter 2 Socio-Economics in British Columbia sharpens the focus of social and economic relationships in BC by giving readers a clear understanding of how the global economic success and resulting high quality-of-life indicators are not evenly distributed. While Chapter 1 sets up the settlement story of BC, Chapter 2 grounds the reader with a key perspective that runs throughout the book, bringing in the political economies of place into broader socio-economic processes. Throughout this chapter, readers begin to look at the relationality of a place under complex, socially produced forces. The case study of homelessness in the northern community of Williams Lake and the provincial capital of Victoria show that even a social problem within provincial boundaries does not appear uniform across regions.

Chapter 3 Aboriginal Issues in British Columbia focuses on the ongoing legacies of colonialism that have shaped the landscape, politics and lives of millions of people in BC since European settlement of the province. After a brief look at the diversity of Aboriginal people in BC, the chapter examines the modern treaty process in the province, which has been a key issue affecting land tenure and property rights, relations between Aboriginal people and non-Aboriginals, and the ability to realize a stable and healthful livelihood. The case study in this chapter highlights another historical event with an ongoing legacy: the Indian residential school system that was in place across Canada

from the 1880s until 1996. The case study provides a look at the history, implementation and effects both inside of BC and among Aboriginal people across the country. It ends by asking readers to consider how such a systematic abuse of a group of people can be reconciled in relation to ongoing land claims and current inequalities that the system engendered.

Chapter 4 Resources in British Columbia focuses on natural resources in the province, which are a source of wealth and sustenance. The extraction of natural resources from land and waters has allowed BC to hold a key place in today's global economy. At the same time, intensive extraction processes have threatened the natural environment. Mining non-renewable resources such as gold also threatens ecologies that support food systems, fisheries and forests. The case studies in this chapter pick up on the historical and contemporary realities of mining in BC, and ask readers to think about how these extraction processes are related to their relationship to the landscape.

Chapters 5, 6 and 7 all focus on important resources in BC.

Chapter 5 Food Systems in British Columbia looks at food systems, a key form of sustenance, and brings a holistic understanding of the physical and social production of food in contemporary society. Rather than focusing solely on agriculture as an industry, this chapter considers food systems in relation to broader resource management strategies such as fisheries management, food security and urban agricultural land use patterns.

Chapter 6 Forestry in British Columbia takes an in-depth look at forestry management and the lumber industry as it has worked over time. It closes by looking at a major bio-social issue facing BC's forests, the mountain pine beetle infestation. In the case study, readers are reminded that there are overlapping factors that contribute to the management of our natural resources, and that even renewable resources can be put into precarious positions despite local stewardship initiatives.

Chapter 7 Health Geography in British Columbia moves away from natural resources and turns its attention to the maintenance of another key resource in BC: its people. It provides a broad overview of the health landscape in BC, focusing on the role of GIS in mapping vast territories of health surveillance. The first case study in this chapter considers acute trauma care in BC by mapping the distance to trauma centres. The second looks at the role of urban "heat islands" that exist in the summer months because of the changes in climate; these heat islands increase health risks in some populations, such as the elderly.

Finally, **Chapter 8 Physical Geography of British Columbia** looks at the physical makeup of the province. In a more traditional volume, this chapter would be placed first, directly after the introduction. But the authors chose to place it at the end in order to emphasize that the social processes explored throughout the book are always deeply rooted in place.

Also included in this book is an appendix that we hope students and teachers alike will use as a resource for understanding and employing research methods across all areas of geography. As

mentioned above, this text is meant to be a dynamic resource, for you, the reader, to add to as you explore deeper into the multiple geographies that BC has to offer.

Attributions

- **Figure 1**. Regions of British Columbia by Hilda Anggraeni

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This is where you can add appendices or other back matter.