eCampusOntario Infrastructure for Open Publishing of Learning Resources

Dr. Wendy Freeman
Director, e-Learning
Ryerson University

Ryerson University

Housekeeping

- Washrooms are by the elevators
- Meeting materials posted library.ryerson.ca/open

Agenda

9:30 a.m. Open Publishing Infrastructure Infrastructure Project Overview
- Dr. Wendy Freeman

9:40 a.m. Updates from Project Working Group Chairs

- Hongbo He, Co-Chair, Infrastructure Team (10 minutes)
- Ann Ludbrook, Co-Chair, Communications & Community Building Team (10 minutes)
- Hugh McGuire, Pressbooks (10 minutes)
- Lars Svekis, Co-Chair, Learning Module Team (10 minutes)

10:20 a.m. Full Demo and Prototype Overview - Hugh McGuire & Sally Wilson

10:45 a.m. Q&A & Discussion - All

11: a.m. Concluding remarks - Dr. Wendy Freeman

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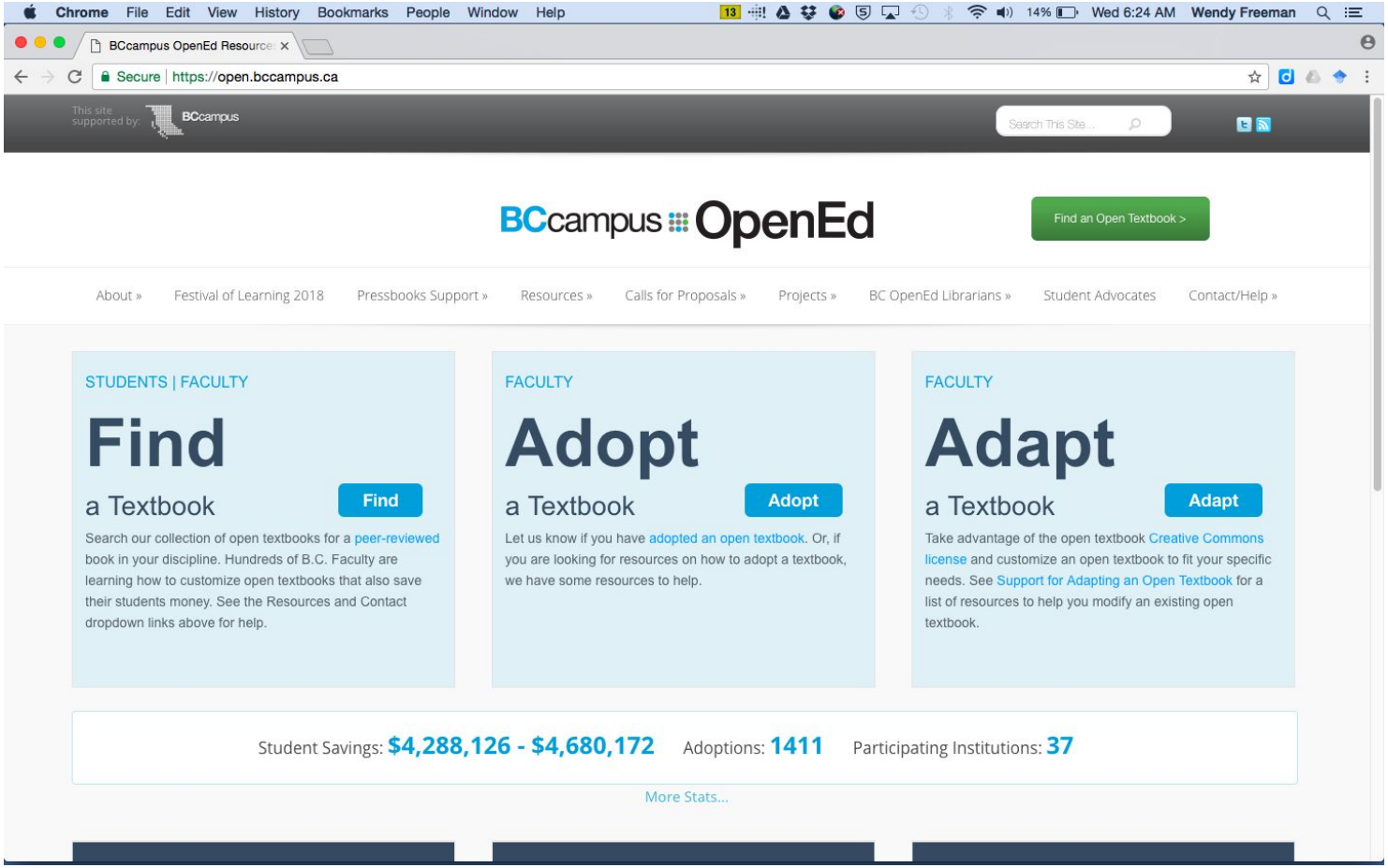
Project Objective

Build a prototype open publishing infrastructure to integrate and extend the existing Open Library portal with a project completion date of Aug. 31, 2017

Where we started



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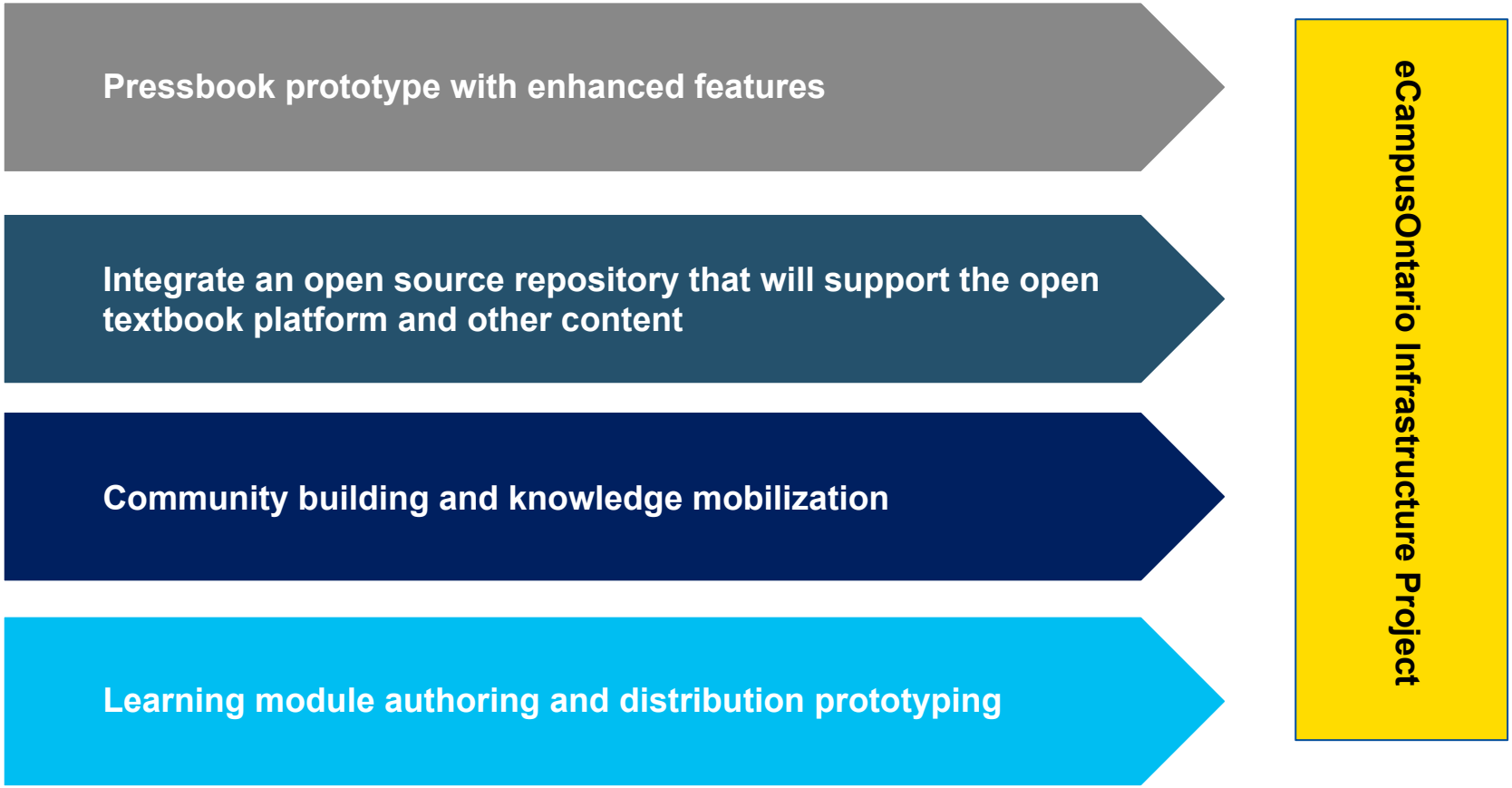
Key Deliverable Workstreams

The four core activity streams are:



Key Deliverable Workstreams

Project leadership and governance structure:

Project Lead: Dr. Wendy Freeman, Director, e-Learning, Ryerson University
Project Manager: Tanya Pobuda, e-Learning, Ryerson University

Communications Workgroup
Co-Chairs: Ann Ludbrook & Sally Wilson
Ryerson University Library & Archives

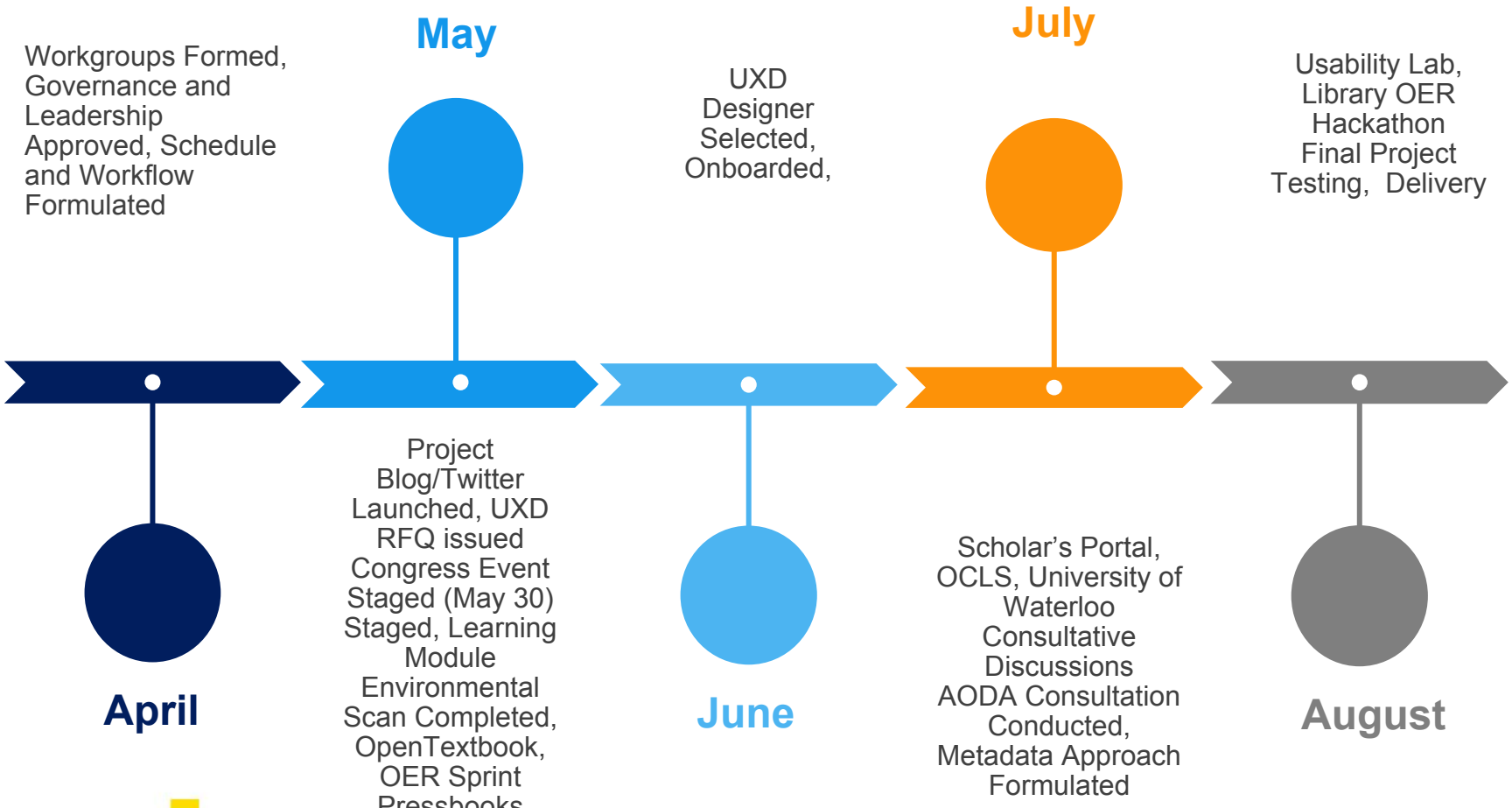
Infrastructure Workgroup
Co-Chairs: Hongbo He, Ryerson Computing and Communications Services
Fangmin Wang, Ryerson University Library & Archives

Pressbooks Workgroup
Chair: Hugh McGuire, Co-Founder, Rebus / Founder, Pressbooks

Learning Module Workgroup
Co-Chairs: Naza Djafarova & Lars Svekis
Digital Educational Strategies, Ryerson University Chang School

Chairs Meeting

Major Milestones



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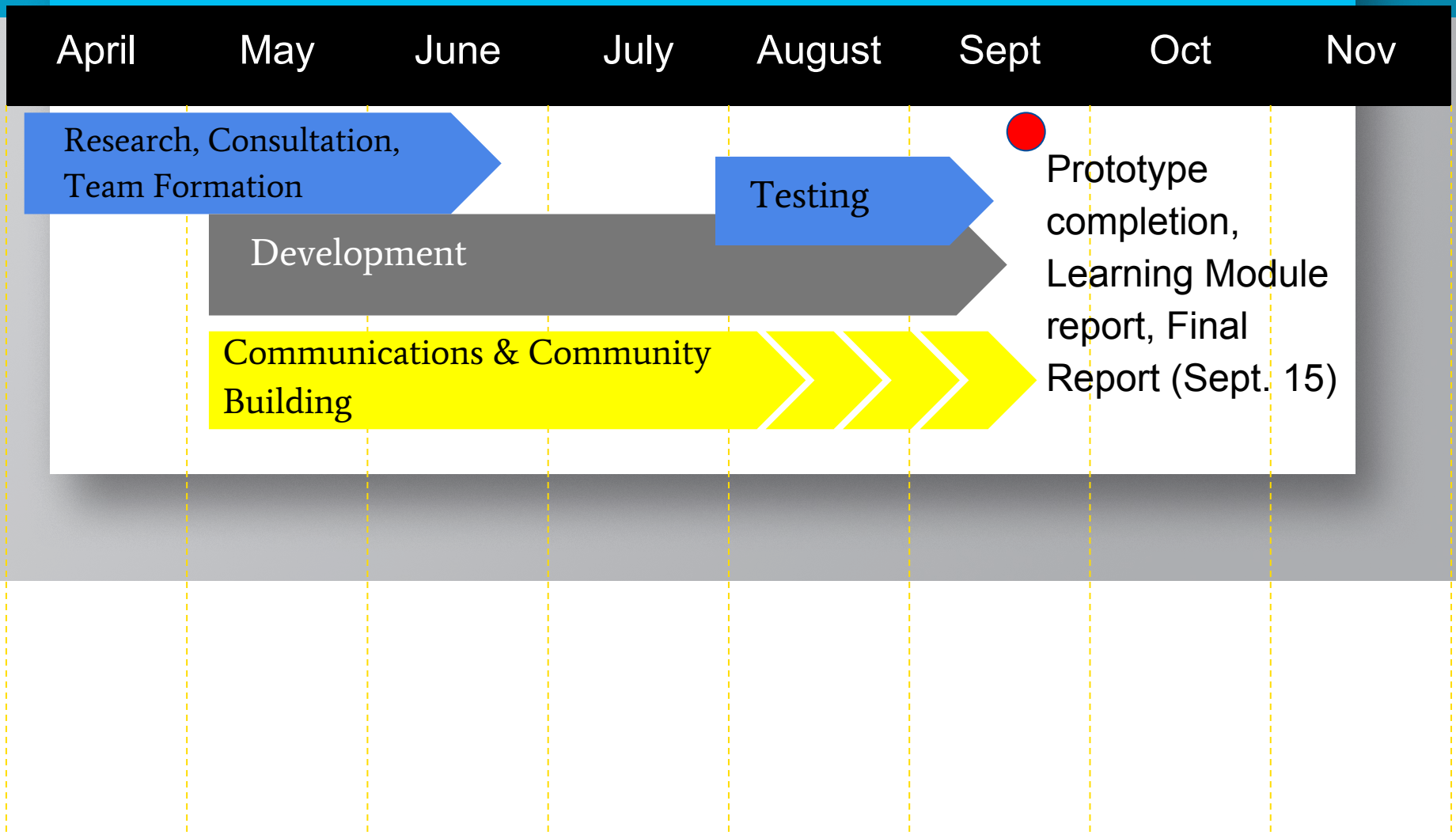
Timeline


April
May
June
July
August
Sept
Oct
Nov
Research, Consultation, Team Formation
Development
Testing
Communications & Community Building
Prototype completion, Learning Module report, Final Report (Sept. 15)

Our Advisory Partners

Queen's University

Scholars Portal
A Service of the Ontario Council of University Libraries

ocls
Ontario Colleges Library Service

University of Waterloo

OCUL
Ontario Council of University Libraries

REBUS Community

Our Technology Partners

Infrastructure Workgroup Tasks

Integrate an open source repository that will support the open textbook platform and other content

- Evaluate available open source repository systems and consult with BCcampus and other Canadian institutions regarding their OER repositories
- Install, configure and customize the functions of the selected repository system to meet the requirements of open textbooks and other types of OER content
- Develop a customized/branded design for an eCampusOntario open textbook library
- Investigate and integrate a Single Sign On (SSO) authentication system (e.g. CAS and Shibboleth) for the selected repository system
- Integrate the selected repository system with Pressbooks
- Extend repository to support possible identified requirements that are not supported out of box

The Deeds

- Evaluated and picked DSpace as the repository
- Active work on testing content uploads using sample open textbooks received from the Library
- Explored and picked metadata schema
- Collaboration and code sprint with BCcampus OpenEd team
- Integrating DSpace with Pressbook (Collaboration with Rebus)
- Integrating DSpace with the OER Wordpress plugin (Collaboration with Agile)

DSpace

- Open Source (BSD License)
- Used by 1,000 + organizations (education, government and private)
- Open Standards: OAI-PMH, OAI-ORE, SWORD, WebDAV, OpenSearch, OpenURL, RSS, ATOM
- Digital content types supported: Text, Images, Motion Graphics, video, mpegs and data sets
- Easy to extend
- Native support of Shib for SSO

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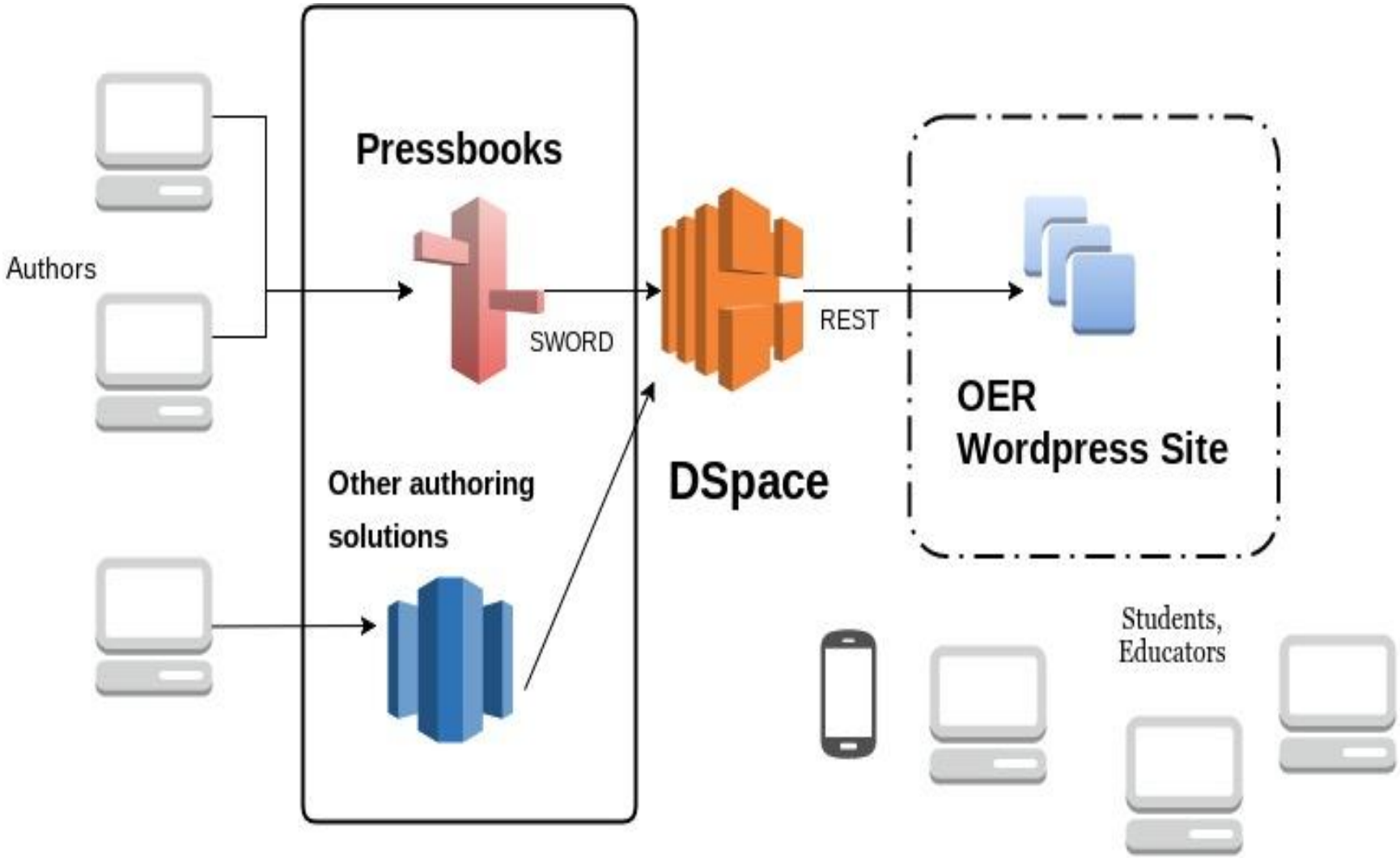
Metadata Schema: Dublin Core

DCMI is simple and generic,
it's native to DSpace
and it can be extended to include
elements specific to OER.


Pressbooks
Authors
SWORD
REST
OER
Wordpress Site
Other authoring
solutions
DSpace
Students,
Educators

Communications Workgroup Tasks

Engaging in ongoing promotion, information sharing and leadership activities across Ontario to support Open Education Resources (OER) skill-building and development

- Speaking at post-secondary events dedicated to open learning content development
- OER working teams and experts actively engaged in community- and foundation-building activities across the higher education community.
- Consult with representation from OCUL, OUCEL, OCLS, University of Waterloo, and Queen's University
- Consultation with upcoming OER and Library association meetings to include focus groups
- Establish opportunities to receive iterative feedback from representative community partners through existing grassroots communities.

Recent Updates

- Establishment of a Project Blog
- Congress 2017 OER Promotional/Community Event on May 30
- Creation of a Poster Presentation
- Launch of a Twitter channel
- OER Librarian listserv
- Consultation session with Scholar's Portal and OCLS
- Creation of an event banner and supporting collateral
- Ongoing news and blog posts

May 30 Congress OER Event

Ryerson University hosted an OER event at Canada's largest gathering of scholars, Congress 2017 hosting 9,000 academics, researchers and policy-makers.

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Open Publishing Infrastructure Project at Ryerson

About The Project

This summer, eCampusOntario and Ryerson University will be spearheading an open publishing infrastructure project designed to enhance and expand eCampusOntario's planned Open Textbook Library.

This library, developed and shared by BCcampus, will provide access to over 180 high-quality, academically reviewed textbooks and open education resources (OER) for Ontario post-secondary students

eCampus Ontario

Wendy Freeman: Project Lead

"Ryerson University is proud of its continued and ongoing work and collaboration with eCampusOntario. Ryerson is deeply committed to and passionate about the ability to provide world-class open educational materials and resources to Ontario post-secondary learners to lower the barriers to access and empower localization by instructors,"

Dr. Wendy Freeman, Director, Office of E-Learning, at Ryerson University.

Four Key Project Workstreams

- A working Pressbook prototype with enhanced features
- Integrate an open source repository that will support the open textbook platform and other content
- Community building and knowledge mobilization
- Learning module authoring and distribution prototyping

Book Oven Partnership

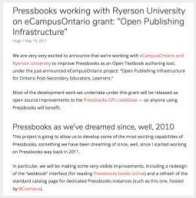
PB PRESSBOOKS

The creation of a technology platform based on Pressbooks, an industry-standard book writing solution.

Pressbooks is simple book production software which exports into all the file formats you need to publish your books:

- MOBI format (for Kindle ebooks)
- EPUB format (for all other ebookstores)
- designed PDF (the "interior book file" for print-on-demand)
- more exotic XML formats

Pressbooks is used by authors, publishers and educational institutions around the world.


Pressbooks working with Ryerson University on eCampusOntario grant: "Open Publishing Infrastructure"

Pressbooks as we've dreamed since, well, 2010

Ryerson Partnerships and Advisors

A cross-functional working group at Ryerson University will be driving a prototype infrastructure to support the Open Textbook Repository. The Ryerson team includes:

- E-Learning Office
- Ryerson University Library & Archives
- Chang School, Digital Education Strategies (DES)
- Computing and Communications Services (CCS)
- Learning and Teaching Office (LTO)

The Ryerson team is supported by several key advisory partners:

- Ontario Council of University Libraries (OCUL)
- Ontario College Library Service (OCLS)
- University of Waterloo
- Queen's University

Queen's University · OCUL Ontario Council of University Libraries · ocls · University of Waterloo · Scholars Portal A Service of the Ontario Council of University Libraries

Community Building

Ryerson University is engaging in ongoing promotion, information sharing and leadership activities across Ontario to support Open Education Resources (OER) community building, knowledge mobilization, skill-building and development.

This will also include the Sprint model, where project members and OER community members can gather together and work on open educational resource creation and training.

For more information about upcoming events visit:
library.ryerson.ca/open/events/

Project Planning

Publications

- Minutes and bi-weekly updates
- Monthly Web newsletter
- Product Schedule
- Google Drive

Final Reporting

Meeting & Events

- Weekly Workgroup
- Chair Committee (Bi-weekly)
- Troubleshooting Sessions (as needed)
- Team Building (Launch, midpoint, close)

Toolkit

- Project Charters
- E-mail Distribution Lists
- Meeting Support Templates
- Project Briefs & FAQs

Project Blog and Twitter: Regular Updates

https://library.ryerson.ca/open/

@RyersonOER

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Poster created by: Ann Ludbrook aludbrook@ryerson.ca and Tanya Pobuda tpobuda@ryerson.ca

Ongoing Updates

INFRASTRUCTURE FOR OPEN PUBLISHING OF CURRICULUM RESOURCES PROJECT

About The Project | News | Events | Partners

POSTS

SEPTEMBER 4, 2017 **EDIT**

Sept. 6, 2017 – Final Feedback Session

Search …

RECENT POSTS

Sept. 6, 2017 – Final Feedback Session

August 11 Usability Day Event

Ryerson University

Future Events

- OER Sprint Toolkit Creation (Sprint methods)
- Late September Ontario-wide Librarian Sprint Day (Sept 29th)
- Open Access Week event (Oct 24th, 2017)
- Funding for OpenCon conference
- OLA Superconference Panel
- Other conferences upcoming

Pressbooks Workgroup Tasks

Design

The overall design will be focused on branding a Pressbooks Textbook Creation and Editing system available to eCampusOntario members, and improving the overall design of the system.

Specific tasks included:

- Developing and implementing a customized/branded design for an eCampusOntario Open Textbook authoring system
- Improvements to the Open Textbook catalog design and implementation
- Improvements to standard Pressbooks web-based “book” interface
- Custom template (web, pdf, epub/mobi) for eCampusOntario

Status:

- Designs completed, integrations complete (?) for : home page, catalog, book homepage / AODA audit underway with OCADU … webbook integration expected in mid Sept.

Pressbooks Workgroup Tasks

Implement WordPress core REST API

- This project will expose any openly licensed Pressbooks book (on any network) to the core REST API, meaning (among other things) that all content (metadata, books, chapters, images etc) can be queried.
- The REST API would also allow other applications to build on Pressbooks, and collections of Pressbooks books.
- **Status**:
  - V2 API complete.

Pressbooks Workgroup Tasks

Submission to DSPACE repository

- We are building a system to allow a Pressbooks book to be submitted to a DSPACE repository
- We are using the SWORD repository submission protocol
- **Status:**
  - prototype repository submission is complete.

Pressbooks Workgroup Tasks

Cloning of books & collections

- Building on the API work, we are developing a system to easily “clone” a complete Pressbooks book
- This will allow any user to copy any openly licensed Pressbooks book (including all content, media etc) into a new version, to allow revision, remixing etc.
- This significantly improves on the export-import method currently used.
- **Status:**
  - Cloning feature implemented, allowing cloning any openly licensed book from any PB network.

Pressbooks Workgroup Tasks

AODA Compliance & Improvement

This project will ensure AODA compliance (for users/authors, and readers) of the OpenTextbook Editing and Creation system. This work will be done in collaboration with OCADU's Inclusive Design Research Center (IDRC). The project will include:

- An audit of the system (for authors and readers)
- Remediation, where necessary, of any problems identified
- Integration of the OCADU / FLOE User Preference Toolbar by default

Pressbooks Workgroup Tasks

Follow-on Project Recommendations

This project will provide recommendations for next steps, and follow-on improvements, including, but not limited to, scoping and budgeting for:

- Core tech improvements: API, Cloning, Versioning
- Infrastructure: LTI Integration, single sign-on
- Features & improvements: Better support for interactive elements, LaTeX & Math, Index & glossary, Contributors, annotation
- Import & Export: Import OpenStax books, export EPUB3, Common Cartridge
- Deployments in Ontario: mechanisms to offer any eCampusOntario member institution a dedicated, branded Pressbooks instance (co-branded with eCampusOntario)
- Integrations: with other open textbook systems, including Rebus Community for Open Textbook Creation

Learning Modules Workgroup Tasks

Team members: Alex Andrei, Anastasia Dimitriadou, Naza Djafarova, Cassandra Ferworn, Greg Gay, Maureen Glynn, Igor Karasyov, Sushila Parikh, Lars Svekis

Conceptualize a new generation of software that will fill existing gaps in authoring tools for high quality open educational resources

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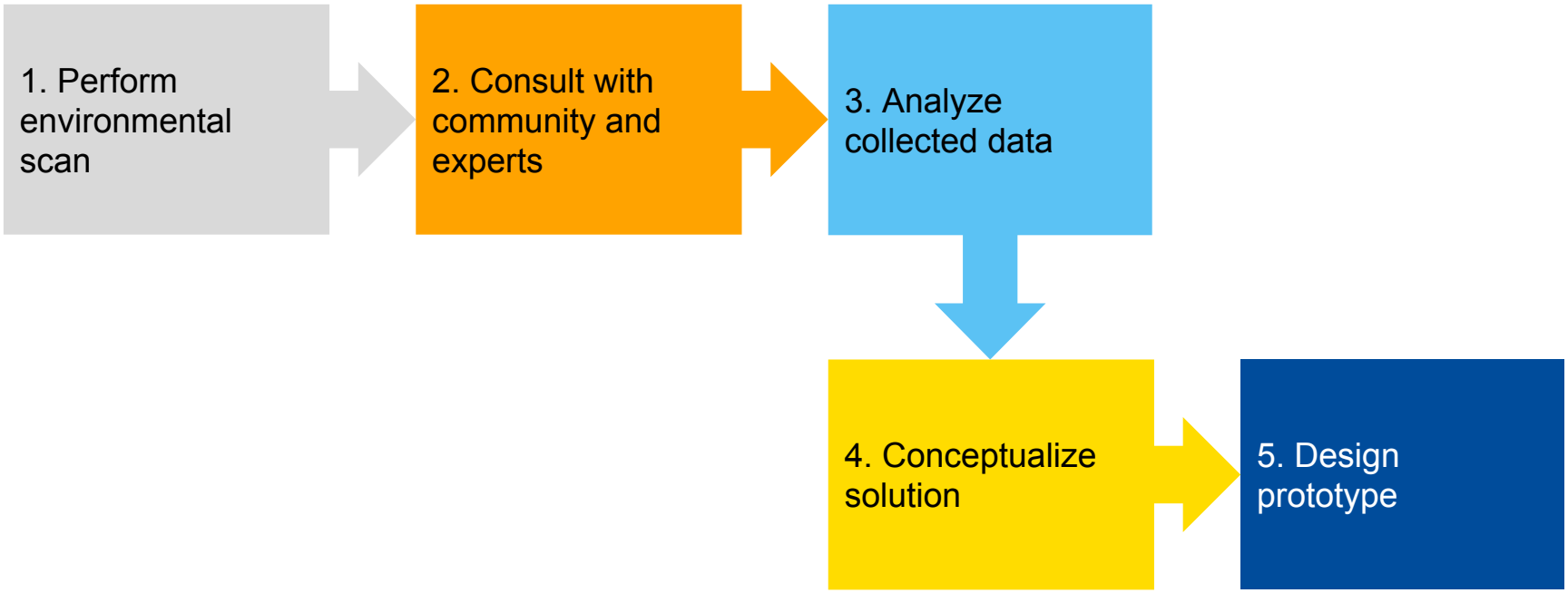
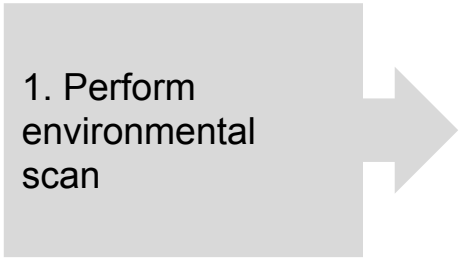
Our Approach



Environmental Scan

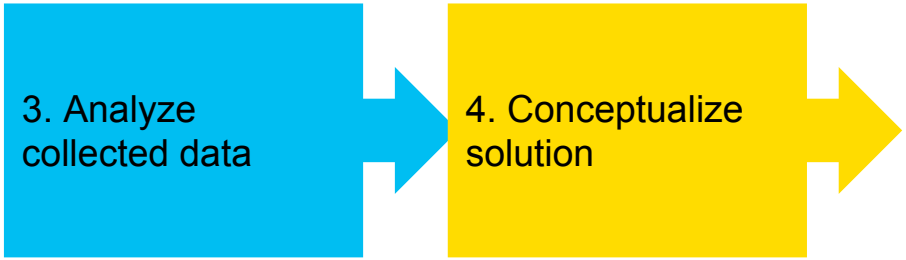


- Methods
  - Review standalone module builders
  - Review integrated content creation tools (CMS, LCMS, OER repositories tools, DAM, etc.)
  - Review automated instructional design systems
- Key Findings
  - Overall gaps of interoperability, personalization, analytics, advising, instructional design and learning assessment, collaboration, and accessibility and universal design.

Consultations with Community and Experts

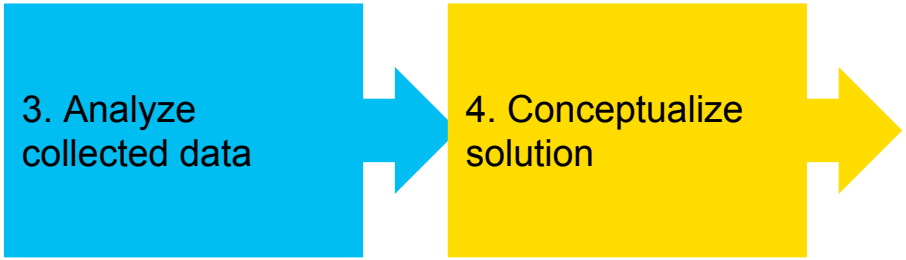
- Methods
  - Two surveys: 68 novice and 71 expert users
  - One-on-one consultations with leading experts (C. Reigeluth, C. Bonk, S. Mishra, D.Wiley, R. Jhangiani)
- Key Findings
  - Need for onboarding instructions / tutorials
  - Great need for instructional design support
  - Strong desire for easy collaboration / co-authoring tools
  - Quality of OERs is important

Conceptualize Solution: Main Features



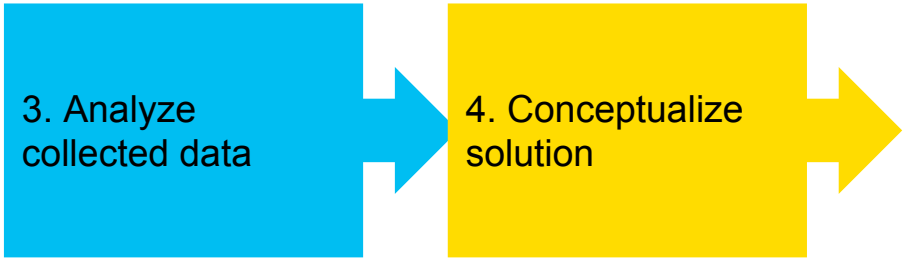
- Onboarding and technical support
  - Intelligent assistance (detect experienced difficulties, provide contextual advice)
  - AI-powered chatbot
- Automated instructional design
  - Instructional design templates
  - Learning objective alignment
  - Intelligent personal advisor (based on machine learning algorithms)
  - Automated ID reviews and feedback
- Collaborative workflow (co-authoring, commenting, reviews)
- Interoperability with other systems
  - Search and use OERs from other repositories
  - Integrate created modules into other systems
- Easily adaptable content
- Accessibility and universal design
  - Automated review and suggestions
- Responsive interface and content

Assumptions



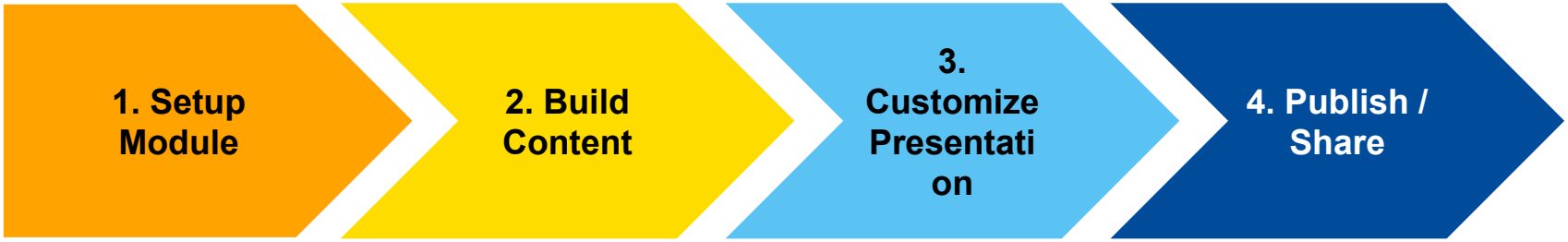
- Single login
  - Module Builder is only available to users logged in to OER Repository
  - Module Builder does not require separate credentials
- Managing OERs
  - Save selected OERs to personal collections/folders
  - Upload user's own files (images, documents, media, etc.) to personal collections
  - Modify/remix existing OERs
- Interactive learning objects
  - LOs are separate OER resources, not part of Module Builder
  - Can be created/modified using builtin editors (separate editor for each LO type)
  - LOs are created as personal assets: need to be published to become public OERs

Limitations



- Metadata standard for OERs is not defined
  - Crucial for successful adoption of OERs
  - Required for search and integration with other repositories
- Interoperability
  - Adopting OERs from other systems
  - Single search across multiple repositories

Module Editor Workflow



- Add metadata
- Add learning objectives
- Select ID template

- Create HTML content
- Add items from repository
- Create assessments
- Arrange all assets in sequence

- Select presentation template
- Change colours
- Add branding

- Publish to repository
- Export as document, ebook, Tin Can API or IMS Common Cartridge
- Get direct link or embedding code

Summary

- **Architecture** - Module Builder should be developed as a component of the OER repository
- **Format** - Learning modules should be stored in the repository in editable format
- **Metadata** - Dublin Core schema is recommended for this project, possibly extended with custom fields.
- **Onboarding** - First-time users should be gently guided from using basic functionality to more advanced features,
- **Intelligent assistant** - Use artificial intelligence (AI) machine learning algorithms to identify behavioral patterns and offer guidance
- **ID tools** - Module Builder should incorporate instructional design (ID) tools to facilitate creation of high quality learning materials.
- **Interactive learning objects (LO)** - Learning objects should be treated as separate assets in the OER repository
- **Tracking changes** - Module Builder should save all changes automatically. It should keep a history of all significant changes
- **Collaboration** - In Module Builder, users should be able to invite other users for collaboration.
- **Accessibility** - All Module Builder tools and interfaces, as well as produced content, should comply with AODA requirements.
- **Responsive design** - Module Builder should be fully functional on all devices regardless of screen size, or platform.

Thank you

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