Developing a Community of Online Research Assignments

Susan [Gardner] Archambault
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**abstract:** This case study describes the development of CORA (Community of Online Research Assignments), an open educational resource (OER). CORA, available at www.projectcora.org, was developed through a Statewide California Electronic Library Consortium (SCELC) grant. The grant proposed to use a “recipe” metaphor to envision shared information literacy assignments as recipes that could be tweaked or easily adapted to fit into any information literacy curriculum. Results from several mixed methods assessment projects were incorporated into the original prototype and subsequent improvements. This case study is discussed within the broader context of the benefits and challenges of open educational repositories.

**Introduction**

Need for Increased Instructional Support

Instruction librarians are responsible for incorporating information literacy (IL) into the curriculum and developing information-literate learners. However, many new librarians enter the profession with little teaching experience because, as Meredith Farkas explains, “it is not positioned as fundamental to our professional education.”¹ New librarians rarely receive training on teaching pedagogy once at their jobs, either, and they must go out of their way to seek it.² Even experienced librarians would benefit from exposure to new assignment ideas, tried and true teaching strategies, and recommended disciplinary resources shared by other librarians who had already tested the techniques. Most experienced instruction librarians know that instruction best practices include developing learning outcomes and some type of assessment of the learning, and
breaking up sessions into chunks that leave time for practice and active learning. But even experienced librarians would benefit from practical examples of how to apply these practices in the classroom. Char Booth notes, “It takes five times as much work to create something from scratch as it does to work from a template.” Given the similarities of academic curriculums across the country, a librarian teaching exchange would be a huge time-saver and save librarians from having to “reinvent the wheel.” Librarians already have a history of sharing and supporting one another (for example, through interlibrary loan and consortia purchasing), so setting up a virtual community of practice where they can share “scholarly conversations” about teaching pedagogy grounded in real-life examples seems natural. The creators of CORA, a repository of learning objects including content and practice and assessment items, looked to the open educational resources (OER) movement for clues on how best to do so.

History of Open Educational Resources

Open education has been a growing trend since 2002. The Open Education Consortium is a collaboration of more than 200 higher education institutions and other organizations working to create open education content. The consortium defines open education as encompassing “resources, tools and practices that employ a framework of open sharing to improve educational access and effectiveness worldwide . . . enabling people around the world to access knowledge, connect and collaborate.” A subset of open education is open educational resources (OER), described as “teaching, learning or research materials that are in the public domain or released with an intellectual property license that allows for free use, adaptation, and distribution.” David Wiley’s five R’s define OER further as the ability to freely access resources and to retain, reuse, revise, remix, and redistribute them. These activities are possible when materials are available with an open licensing tool such as a Creative Commons license. Creative Commons is the most
common licensing framework for regulating access and reuse. If a licensor decides to allow derivative works, she or he may also choose to require that anyone who uses the original work make the new work available under the same license terms. This idea is called “ShareAlike,” and Creative Commons calls it “one of the mechanisms that helps the digital commons grow over time.”

OER Benefits and Barriers

The literature has identified both self-serving and altruistic benefits of OER participation. Self-serving benefits include increased visibility and the promise of more frequent citations; peer-to-peer learning and knowledge sharing; a wider variety of material to access, reuse, tweak, and be inspired by; and the saving of time and money through less duplication of effort. Altruistic benefits include promoting lifelong learning for the public good and sharing resources so they can be modified and improved upon by others. Bronwyn Hegarty asserts that OER participants have certain values or principles of openness, including connectedness, trust, and innovation.

Despite these benefits, OER has failed to realize its potential to transform educational practice; recent surveys show educators have been slow to participate. OER use presents teaching faculty with challenges and barriers. Many faculty have concerns about the lack of standardized quality monitoring or peer review. Most digital learning object repositories have an informal review process allowing members of the community to submit comments, but this process is hardly the same thing as peer review. Faculty knowledge and beliefs on copyright, licensing, and intellectual property are put to the test. Some feel uncomfortable sharing materials openly and fear rejection or criticism, while others lack a basic understanding of copyright. Another barrier is the technical and digital literacy skills required, which some faculty lack and do not have time to develop. Often, no institutional policies and incentives encourage faculty
participation; higher education has been slow to align tenure and promotion with alternative modes of scholarly communication.\textsuperscript{19} Catherine Cronin identified the desire among academics to maintain a boundary between their personal and professional digital identities as yet another barrier to participating in open education.\textsuperscript{20}

**Long-Term Costs and Sustainability**

There is also concern about the long-term costs and sustainability of OER.\textsuperscript{21} How can open educational resources be maintained and sustained if they are free? Common models include grant-seeking, annual fees, institutional or corporate sponsorship, or using volunteer contributors.\textsuperscript{22} Additional costs beyond the resource itself include staff training and making the resources reusable and interoperable across multiple platforms.\textsuperscript{23} Metadata information for learning objects must include several aspects outside the scope of traditional bibliographic schemes to make reuse simpler. A universally accepted, standard format would facilitate interoperability.\textsuperscript{24} In 2002, the Institute of Electrical and Electronics Engineers (IEEE) published the Learning Object Metadata (LOM) Standard as a model to describe educational resources.\textsuperscript{25} This was superseded by the Learning Resource Metadata Initiative (LRMI) in 2011, a metadata specification for describing learning resources based on Schema.org, a project launched in 2011 to create and support a common set of schemas for structured data markup on web pages.\textsuperscript{26} Schema.org includes such elements as resource type, age range, educational alignment with a framework, educational use, and use rights. Few OER platforms used LRMI as their native metadata schema, but several sites have mapped to it and enable microtags to be added to resource description pages.

**Existing OER Repositories**
A handful of existing OERs interest the library community. Early and enduring textbook-related and course-related learning object repositories include OpenStax from Rice University in Houston\textsuperscript{27} and MIT OpenCourseWare from the Massachusetts Institute of Technology in Cambridge.\textsuperscript{28} California State University System’s Multimedia Educational Resource for Learning and Online Teaching (MERLOT) contains links to discipline-specific learning materials and exercises. MERLOT gives peer review ratings by faculty experts and users in three different categories: ease of use, content quality, and potential effectiveness as a teaching tool.\textsuperscript{29} Several OERs are aimed at K–12 educators, including Curriki (Curriculum Wiki),\textsuperscript{30} Gooru,\textsuperscript{31} Discovery Education,\textsuperscript{32} Science NetLinks and Biosci Ed Net (BEN) from the American Association for the Advancement of Science,\textsuperscript{33} and Amazon Inspire.\textsuperscript{34} Other OERs and learning repositories include Project Look Sharp for media literacy,\textsuperscript{35} OER Commons,\textsuperscript{36} Peer Reviewed Instructional Materials Online (PRIMO) for multimedia tutorials,\textsuperscript{37} HumBox for higher education humanities teaching and learning resources in the United Kingdom,\textsuperscript{38} ABLConnect (Activity Based Learning Connection) for active learning in higher education,\textsuperscript{39} and the ACRL Framework for Information Literacy Sandbox,\textsuperscript{40} which focuses exclusively on the new ACRL frames. Two now-defunct repositories are Jorum\textsuperscript{41} and the Animated Tutorial Sharing Project (ANTS) described by Carmen Kazakoff-Lane.\textsuperscript{42}

**Vision for a New Repository**

The primary audience for a new information literacy repository would be undergraduate and graduate educators, but much of it would be adaptable for secondary educators too. Given the shrinking budgets of school libraries everywhere, such a repository could become a welcome resource. Faculty along with librarians would be important collaborators. Since faculty often prefer to learn from one another rather than from librarians, getting them on board and active in
the repository is crucial. Aside from MERLOT and OpenStax, which allow users to filter results by language, none of the existing resources reviewed by the author cater to an international audience. Some resources include the ability to filter results by national or regional learning standards. A new repository could be designed to be useful for an international audience. Although each country has different IL models and frameworks, the standards developed by national organizations across countries are surprisingly similar. Most countries base their standards in part or in whole on those of the United States, the United Kingdom, or Australia and New Zealand. Finally, there is the need for a resource that brings in new and multiple literacies that students require (including data, visual, and archival literacies) outside of traditional information literacy. Such a resource would ultimately lead to greater student achievement and lifelong learning.

Background

In 2014, Susan Gardner Archambault (the author) and Lindsey McLean, both librarians at Loyola Marymount University (LMU) in Los Angeles, received a $5,000 Statewide California Electronic Library Consortium (SCELC) Project Initiatives Fund grant (SCELC, 2017). The grant was titled “Recipes for Information Literacy,” and it proposed to expand upon an internal collection of IL assignments at LMU. The project used a “recipe” metaphor to envision assignments as recipes that could be tweaked or easily adapted to fit into any information literacy curriculum. The collection aimed to become like a searchable online “cookbook” containing shared, reliable IL recipes. Educators contributing assignments to the collection were required to release the assignments under an intellectual property license that permits their free use and repurposing by other educators. In this way, user feedback would enhance the assignments to build a rich corpus of best practices. The project would allow SCELC member librarians to
participate as contributors, serve as members of the CORA Advisory Group, or volunteer for usability testing.

Developing a Prototype

The creators of CORA conducted two faculty focus groups at LMU to gather input on the characteristics of effective research assignments and the desired features in a searchable, open access repository. A draft assignment template for the focus groups was also used, which drew from instructional design best practices and LRMI metadata such as the educational alignment and properties elements (see Figure 1). It also had a “Potential Pitfalls” field to encourage reflective practice in which users could analyze their actions to learn to do their work better.

Focus group questions were as follows:

1. Tell us about a research assignment that you think was effective or productive? What made it so?
2. Did you ever assign a research assignment that wasn’t effective or productive? Why didn’t it work?
3. What features would make a shared online research assignment database easier for you to use?
4. How do you come up with ideas for research assignments?
5. Do you like the name CORA for this project?
6. We’re passing out a sample literature review assignment (Figure 1). Take a look at the categories and mark up what you would change. Would you add, remove, rearrange, or make anything clearer?
Several recurring themes emerged from the focus groups that were incorporated into CORA. One theme was the importance of modeling or showing examples of the desired characteristics of a successful assignment and providing relevant resources to complete the assignment. Another theme was the importance of scaffolding, or allowing for successive levels of progress toward the end goal of an assignment or learning outcome. Examples of scaffolding included breaking up assignments into smaller steps that would build on each other, giving feedback early by approving a research topic, or offering suggestions on a rough draft. The “Supplemental Instructional Materials” field was expanded in the template to include new fields for “Relevant Links,” “Course Context,” and “Instructor Resources,” such as in-class activities or worksheets that allowed more opportunities for modeling and scaffolding. Also, the “Assessment” field was relabeled “Assessment or Criteria for Success.”
Another theme that emerged was the importance of peer learning. For this reason, assignments can now be classified by “group” or “individual,” and a search filter for “individual” versus “group” assignment was added. Finally, the focus groups reacted negatively to the idea of letting users rate the assignments. Archambault and McLean scrapped the idea of a ratings system and replaced it with a feature called “I adapted this.” There were generational differences in faculty members’ reaction to the principles of open access, with older faculty members viewing assignments as their intellectual property and being more reluctant to share than younger faculty members. At the suggestion of one faculty member, the creators of CORA added a field for “Ability Level” to distinguish lower-level undergraduate versus upper-level undergraduate and graduate level assignments.

Once Archambault and McLean finalized a draft prototype of the CORA website, they contracted with the Cherry Hill Company, a Web application development company, to build and host a live prototype of CORA. The prototype used Drupal, a popular open source content management system. Drupal is well-regarded for keeping plug-ins up-to-date, but it can be difficult to use because of its complex framework. The creators tweaked CORA through biweekly online check-in meetings and an online ticketing system.

CORA launched in January of 2016 (see Figure 2). The site contained assignments searchable by discipline, information literacy concept, or keyword. Information literacy concepts included both the old ACRL “Information Literacy Competency Standards for Higher Education” and ACRL’s new “Framework for Information Literacy for Higher Education.” Users could filter assignments by individual versus group and by ability level. Along with assignments, CORA provides a collection of teaching resources searchable by discipline, resource type, and keyword. A blog was included for site updates, and a Help Center answered
frequently asked questions (FAQs). The Help Center included information about the site and “how to” resources on assignment design (for example, an assignment design worksheet).

Anyone could browse or search CORA, but someone could only add an assignment, comment on someone else’s assignment, use the “I adapted this” feature, or suggest a teaching resource by signing up for a user account. The Attribution-NonCommercial-ShareAlike (CC BY-NC-SA) Creative Commons license was chosen as the only licensing option for assignments contributed to CORA.

User Testing

After CORA launched, the creators formed a CORA Development Group with 14 librarians from different institutions to provide additional feedback. Development Group members and other librarian and faculty volunteers participated in several small mixed methods studies run by the author, including task-based usability testing, informal digital observations, interviews, and card
sorting. Also, a convenience sample of readily available attendees from the 2016 European Conference on Information Literacy participated in a survey. The studies were designed to answer these questions:

1. How well are users able to find the results they need when searching for materials on the CORA site? How can their success be improved?

2. What is the information-seeking behavior of instructors as they design research assignments? Which online resources do they use?

3. How can the ease of use be improved for CORA contributors?

4. How can CORA be useful for an international audience beyond the United States?

Following the studies, a list of recommended changes for CORA resulted in a second “CORA Enhancement Grant” from SCELC to make the desired improvements.

Task-Based Usability Testing

Three librarians and one faculty member were assigned tasks in random order from a list of 10 task scenarios (see Appendix A). They were asked to “think aloud” as they completed each task. The sessions were recorded using Camtasia software, and both the screen and audio were captured. Later, three more librarians were assigned the same tasks in random order to test a new version of the CORA home page.

Informal Digital Observations

Two librarians were given two prompts and recorded for 20 minutes using Camtasia (both the screen and audio were recorded). The first prompt stated, “You are searching online for resources to help you with some upcoming library instruction sessions. Show me what resources you use to help you plan for your library instruction and how you use them.” The second prompt read, “Go to the CORA (Community of Online Research Assignments) website:
www.projectcora.org and explore it as a potential resource to help you with your library instruction.” Participants were told to work on the first prompt for 10 minutes and then switch to the second prompt for the remaining 10 minutes.

Interviews

Two librarians were interviewed and asked the following questions:

1. Tell me about a time when you found something useful online that helped you prepare for library instruction. Why was it useful? What do you like least about it?
2. Are there other online tools that you use frequently to prepare for library instruction?
3. How do you discover these resources?
4. Have you ever used the CORA site before?
5. When did you last log into an account on any site (for example, Facebook) and why did you sign into your account?
6. What other ways might this site (CORA) fit into your work?

Card Sorting

Ten librarians and faculty members participated in an online closed card sorting activity through Optimal Workshop, software designed to improve user experience.49 The activity tested predefined “Teaching Resource” categories by asking participants to sort a list of 27 teaching resources into one of 10 categories that made sense to them (see Figure 3). Examples of the teaching resource categories included “PRIMO database,” “VALUE [Valid Assessment of Learning in Undergraduate Education] rubric,” and “teaching strategies column.” The 10 predefined category options for each item were pedagogy/theory, research study, assessment, activity, citation tool, technology tip, opinion, digital learning object, subject guide, and “don’t know.”
Survey

Attendees at the 2016 European Conference on Information Literacy from 24 countries participated in a brief survey (see Appendix B). It was based on the overlap between higher education standards for IL in the United States, United Kingdom, and Australia and New Zealand. The Society of College, National and University Libraries (SCONUL) “Seven Pillars of Information Literacy,” the Australian and New Zealand Institute for Information Literacy (ANZIL), and “A New Curriculum for Information Literacy” (ANCIL) frameworks were aligned with the ACRL “Information Literacy Competency Standards for Higher Education” and ACRL’s new “Framework for Information Literacy for Higher Education” to show overlap (see Table 1). The survey showed a screenshot of some integrated “information literacy concepts” and asked for the level of agreement with the statements “The Information Literacy Concepts are
clear to me” and “The Information Literacy Concepts are relevant to the standards or framework I use in my own country.” The survey also asked about the “Ability Level” drop-down on CORA’s “Assignments” search page and the “Resource Type” drop-down on the “Teaching Resources” section of CORA. It asked if participants had used CORA before and what resources they consult to prepare for library instruction.

Table 1.
Overlap of information literacy standards in the United States, United Kingdom, and Australia and New Zealand

<table>
<thead>
<tr>
<th>Association of College and Research Libraries Standards (ACRL), “Information Literacy Competency Standards for Higher Education” (United States, 2000)</th>
<th>Identify information need</th>
<th>Find information</th>
<th>Evaluate information</th>
<th>Use information</th>
<th>Ethics</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Standard 1 (“Defines information need”)</td>
<td>Standard 2 (“Accesses information”)</td>
<td>Standard 3 (“Evaluates information critically”)</td>
<td>Standard 4 (“Uses information effectively”)</td>
<td>Standard 5 (“Uses information ethically and legally”)</td>
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<tr>
<td>ACRL, “Framework for Information Literacy for Higher Education” (United States, 2016)</td>
<td>“Research as Inquiry”</td>
<td>“Searching as Strategic Exploration”</td>
<td>“Authority Is Constructed and Contextual”; “Scholarship as Conversation”</td>
<td>“Information Creation as a Process”</td>
<td>“Information Has Value”</td>
</tr>
<tr>
<td>A New Curriculum for Information Literacy (ANCIL) (United Kingdom, 2011)</td>
<td>--</td>
<td>Strand 5 (“Resource discovery in your discipline”)</td>
<td>Strand 4 (“Mapping and evaluating the information landscape”)</td>
<td>Strand 8 (“Presenting and communicating knowledge”); Strand 9 (“Synthesizing information and creating new knowledge”)</td>
<td>Strand 7 (“Ethical dimension of information”)</td>
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</tr>
<tr>
<td><strong>Australian and New Zealand Institute for Information Literacy (ANZIIL), “Australian and New Zealand Information Literacy Framework” (Australia and New Zealand, 2004)</strong></td>
<td>Standard One (“Recognises the need for information and determines the nature and extent of the information needed”)</td>
<td>Standard Two (“Finds needed information effectively and efficiently”); Standard Four (“Manages information collected or generated”)</td>
<td>Standard Three (“Critically evaluates information and the information seeking process”)</td>
<td>Standard Five (“Applies prior and new information to construct new concepts or create new understandings”)</td>
<td>Standard Six (“Uses information with understanding and acknowledges cultural, ethical, economic, legal, and social issues surrounding the use of information”)</td>
</tr>
<tr>
<td><strong>Society of College, National and University Libraries (SCONUL), “The SCONUL Seven Pillars of Information Literacy”</strong></td>
<td>Pillar 1: Identify (“Able to identify a personal need for information”); Pillar 2: Scope (“Can assess current knowledge”)</td>
<td>Pillar 3: Plan (“Can construct strategies for locating information and data”); Pillar 4: Gather (“Can locate and access the information”)</td>
<td>Pillar 5: Evaluate (“Can review the research process and compare and evaluate information and data”)</td>
<td>Pillar 7: Present (“Can apply the knowledge gained: presenting the results of their research, synthesising new and old information and data to create new knowledge and disseminating it”)</td>
<td>Pillar 6: Manage (“Can organize professionally and ethically”)</td>
</tr>
</tbody>
</table>
Key Findings and Interventions

Search Functionality

Problems emerged with user-generated tags because librarians across multiple institutions assigned them with no guidelines. Common problems included spelling errors, different tags for the same concept (for example, theology and religion), and tags that were too narrow. To help with this problem, users must now request a new tag if they want to add one that is not already in the system. Further work needs to be done to standardize the tags. One option is to connect with an established education-based thesaurus such as that of the Education Resources Information Center (ERIC) through an application programming interface (API). Another option is to create our own thesaurus that has consistency in top-level subject terms, with broader and narrower classes that users can select in a drop-down box.

Teaching Resources

Librarians prepared for library instruction by looking at the library resources in their own library and applying search techniques for a specific research topic or subject area. They did not search for pedagogical learning theories or active learning ideas. When told to use CORA, they gravitated toward the “Assignments” section rather than the “Teaching Resources” section. The card sorting activity showed support for adding more practical resources to the “Teaching Resources” section such as a citation tool (100 percent classified the Citation Fox, a tool that provides citation rules, in this category), technology tips (70 percent classified educational
technology in this category), and subject guides (100 percent classified LibGuides here). These
categories were added to the “Teaching Resources” section, and the link was renamed “Teaching
Toolkit” to reflect an expanded list of resource types.

Giving Credit

Task 5 on the task-based usability test (“cite or give credit for one assignment in CORA,” see
Appendix A) scored a 20 percent success rate across five people. To make this task easier and
encourage people to give credit, a “Suggested Citation Field” for each assignment was
automatically generated and appended to each assignment using structured content. Changes
were also made to the user profile pages to display all assignments with which a user was
involved, whether as contributor, collaborator, or adapter. A “Contributor Stats” section was
added to the bottom of each user profile page with metrics for each assignment contributed (total
page views, number of adapters, number of comments, and number of times related documents
were downloaded). This statistics section allows for easier demonstration of an individual’s
impact as a contributor to the CORA site. Finally, leaderboards were added to the CORA home
page to show in real-time the most popular assignments, most adapted assignments, and most
commented-on assignments.

Building a Community

Users generally viewed the CORA site as a marketplace for finding assignment ideas
rather than as a community. Task 3 of the usability test (“add a public comment about one
CORA assignment,” see Appendix A) had only a 38 percent success rate across six people
because they did not understand that they had to log in before they could add a comment. To fix
this, the “Add a New Comment” feature and the “Adapt this Assignment” feature are now visible
without logging into an account. If a user is not logged in, clicking on one of these links will lead
him or her to the log-in prompt. Then, the user will be returned to the original assignment he or she was viewing. The more people who comment on or adapt an assignment, the more the assignments will be enhanced by this peer feedback.

Task 4 (“contact the author of a CORA assignment”) had a 67 percent success rate across three people. To improve on this, e-mail addresses are now displayed on user profile pages for easier contact. When users register, the default is to display their e-mail address on their profile page; they must uncheck this to opt out. Furthermore, users now get reminders upon log-in to complete their user profile if key elements are missing; profiles with more information will better facilitate a sense of community among CORA users. The MailChimp module, an e-mail marketing service, was also installed and integrated with our registered user list to allow for regular updates.

Findings Related to Signing Up and Participation

Users were reluctant to sign into CORA and preferred to search and browse without an account. During Task 1 of the usability test, they expressed dissatisfaction at having to wait for administrators to approved their account. The long wait time for account approval was eliminated by implementing automatic approval of all users who sign up with a .edu e-mail account. Also, the “New User Account” form was too long and seemed to discourage people from signing up. To make the form less intimidating, it was spread across two pages, with mandatory fields on page 1 and optional fields on the second page.

Findings Related to International Audiences

Thirty-eight attendees at the 2016 European Conference on Information Literacy completed the survey in Appendix B. Forty-five percent of the participants were from northern Europe; 26 percent from southern Europe; 10 percent from North America; 5 percent from Australia; 3
percent from South America; 3 percent from Asia; and 8 percent listed “other.” Most respondents (95 percent) had never used CORA before. Most reported using practical resources (for example, library databases, LibGuides, handbooks, and websites) rather than looking up pedagogical learning theories or active learning ideas to prepare for library instruction. Eighty-six percent of respondents agreed that information literacy concepts from the United Kingdom and Australia and New Zealand integrated alongside IL standards from the United States were clear. Seventy-five percent agreed that the listed IL concepts were relevant to the standards or framework used in their own country. This expanded list of “information literacy concepts” was added to the “Assignments” search box page (see Figure 4).

Only 68 percent of participants were satisfied with the list of “Ability Levels” in the “Assignments” section, which offered a choice of high school, undergraduate-lower division, undergraduate-upper division, and graduate. Reasons given for finding the terminology confusing included not understanding the difference between upper division and lower division, not understanding the term high school, and not comprehending the difference between undergraduate and graduate. The terminology was revised to give international equivalents for each category (for example, secondary, bachelor’s, master’s/doctoral) and to eliminate the upper division versus lower division distinction.
Discussion: The Future of CORA

Although CORA has come a long way since its launch in 2016 thanks to the generous support of SCELC, it faces the ongoing challenge of sustainability. The growing list of promising but now-defunct open access repositories serve as cautionary tales. A study for the Organisation for Economic Co-operation and Development declares, “Every Open Education Program must consider how their project will become sustainable once it is, voluntarily or involuntarily, freed from the apron-strings of the start-up funding institution.” Now that the SCELC grants have ended, CORA must discover new funding and a stable group of volunteers apart from the author to keep it up-to-date. Because CORA sits on the Drupal platform, specialized software knowledge is required to make major enhancements, but Drupal’s advanced framework and capabilities make migration to an easier hosting platform such as WordPress an unattractive option. Another looming threat is the format of most contributions (.docx files), since this format may not last; more open formats such as .odt along with a required pdf version may be needed.
CORA has barely scratched the surface in attracting a core user group. There are currently 411 librarians with registered user accounts and only 29 faculty. Anecdotally, faculty hesitancy appears to relate mostly to shortage of time, lack of technical skills, or an unwillingness to share their materials. In academic culture, Lee Bolman and Joan Gallos say, “Autonomy and individuality, which are highly valued, impede consensus and collaboration.” On the other hand, librarians are a more supportive and sharing community, so there are fewer barriers. There are currently 96 assignments and 147 teaching resources in CORA. More people use CORA than contribute to it. Here are the statistics from March 2017 to March 2018:

- 113,346 page views
- 21,372 users
- 32,975 sessions
- 152 countries
- Average session duration: 3:32 and average pages viewed per session: 3.44.

Marketing efforts included library conference presentations, a Twitter and Facebook presence, and postings to relevant library electronic mailing lists, such as the ILI-L Discussion List, acrlframe, and INFOLIT. CORA was also advertised on faculty discipline e-mail lists, such as the Communication, Research, and Theory Network (CRTNET). The library e-mail list has proved effective: whenever anyone mentions a CORA assignment, the statistics skyrocket around that time. Also, publicity from receiving the ACRL Instruction Section Innovation Award has helped spread the word. In 2017, ACRL released the largely derivative but narrower-in-scope ACRL Framework for Information Literacy Sandbox, which now competes with CORA for a similar audience. CORA and the Sandbox might work well together. CORA can also
consider mapping to components of LRMI and incorporating the mapping into the CORA Metadata Schema to increase findability from major search engines and more interoperability.

For CORA to succeed, more librarians and faculty must participate. This means that institutions need to recognize and reward contributions from librarians and faculty outside the traditional peer review model and embrace “a new way for practitioners to demonstrate professional impact as teachers, distinct from their academic research work.”

CORA fills a gap for instruction librarians needing practical examples and applications that model good instructional design. To this end, it has already succeeded somewhat. There are exemplary CORA contributions in the areas of assessment (Science in the Media), active learning (Pass the Problem), and scaffolding (Research Exploration Exercise), as well as contributions from a task force across multiple institutions (CA Catholic Information Literacy Taskforce tag).

Conclusion

This paper describes the evolution of CORA, an open educational resource (OER) for librarians and faculty in higher education. Results from several mixed methods assessment projects were incorporated into the original prototype and used to make subsequent improvements. CORA still faces many challenges, but if it prevails, its current collection of assignments and teaching resources will be enriched over time through additional user feedback, leading to a more reliable and reproducible collection.

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## Appendix A

### Task-Based Usability Scenarios

<table>
<thead>
<tr>
<th>Task</th>
<th>Scenario</th>
<th>Successful completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task 1</td>
<td>Sign up for an account on the Community of Online Research Assignments (CORA) site (<a href="http://www.projectcora.org">www.projectcora.org</a>).</td>
<td>Fills out the new contributor form and saves it.</td>
</tr>
<tr>
<td>Task 2</td>
<td>Starting on the CORA homepage, search for and find one assignment that interests you. What is the name of the assignment?</td>
<td>Locates an assignment in CORA that is of interest using a search strategy (e.g., browse, search, related link, etc.).</td>
</tr>
<tr>
<td>Task 3</td>
<td>Add a public comment about one assignment in CORA that interests you.</td>
<td>Adds and saves text in the Comment box or “I Adapted This” section.</td>
</tr>
<tr>
<td>Task 4</td>
<td>Get in touch with the author of one assignment in CORA that interests you.</td>
<td>Finds contact information of contributor.</td>
</tr>
<tr>
<td>Task 5</td>
<td>You decide to use one assignment from the CORA site in your own class. How can you give credit to the original author(s) of the assignment?</td>
<td>Locates the information from the Help Center page “Citing an Assignment in CORA” explaining how to cite a source in CORA in various style formats.</td>
</tr>
<tr>
<td>Task 6</td>
<td>You have created the assignment in Appendix A that you want to share with others. Add your assignment to the CORA site.</td>
<td>Uploads the assignment file into CORA and/or fills out some of the descriptive or classification fields.</td>
</tr>
<tr>
<td>Task 7</td>
<td>Starting on the CORA homepage, search for and find one teaching resource that interests you. What is the name of the resource?</td>
<td>Locates a teaching resource in CORA that is of interest using a search strategy (e.g., browse, search, related link, etc.).</td>
</tr>
<tr>
<td>Task 8</td>
<td>Suggest a teaching resource for the CORA site.</td>
<td>Fills out the “Suggestion Form” for teaching resources or e-mails the administrators a suggestion.</td>
</tr>
<tr>
<td>Task 9</td>
<td>Help publicize CORA by talking about it on social media.</td>
<td>Communicates with CORA’s Facebook account or twitter account; or mentions CORA on a social media channel.</td>
</tr>
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</tr>
<tr>
<td>Task 10</td>
<td>CORA is thinking about changing its home page layout to the sketch in Appendix B. Circle what you find useful and x through what you don’t find useful. If you think something should be added to the page, add it with a sticky note. If there is something you don’t understand, add a ? next to it.</td>
<td>Discusses what they find useful versus not useful and anything that is missing or that they do not understand.</td>
</tr>
</tbody>
</table>

Appendix B

European Conference on Information Literacy (ECIL) Survey

Thank you for participating in this brief survey. We want to improve the CORA (Community of Online Research Assignments) site, and we are interested in getting feedback from international users. CORA is an open access resource of information literacy assignments and teaching resources.

1. What country are you from?

2. What resources do you use to prepare for library instruction or information literacy instruction?

3. Have you ever used the CORA site (www.projectcora.org) before?

4. Here is a screenshot of the Information Literacy Concepts drop-down on the Assignments search page in the CORA site. Rate your level of agreement with the following statements about the Information Literacy Concepts.

   Conditional Questions:
   How could the Information Literacy Concepts be clearer?
   How could the Information Literacy Concepts be more relevant to your own country?

5. Here is a screenshot of the Ability Level drop-down on the Assignments search page. Rate your satisfaction with the Ability Levels (e.g., high school, undergraduate, and graduate).

   Conditional Question:
   How could the Ability Levels be improved?
6. Here is a screenshot of the Resource Type drop-down on the Teaching Toolkit search page. Rate your level of agreement with the following statements about the Resource Types.

Conditional questions:
How could the Resource Types be clearer?
How could the Resource Types be more relevant to your teaching needs?
What Resource Types are missing?

Notes


3. Megan Oakleaf, Steven Hoover, Beth Woodard, and Jennifer Corbin, “Notes from the Field: 10 Short Lessons on One-Shot Instruction,” *Communications in Information Literacy* 6, 1 (2012): 5–23, https://doi.org/10.15760/comminfolit.2012.6.1.114


9. Creative Commons, “About the Licenses,” accessed April 1, 2018, 
https://creativecommons.org/licenses/.

10. SPARC (Scholarly Publishing and Academic Resources Coalition) Europe, “The Open Access Citation Advantage Service (OACA),” 2018, accessed April 2, 2018, 


42. Kazakoff-Lane, “Anything, Anywhere, Anytime.”


