

Catherine Palmer, Char Booth, and Lia Friedman

Collaborative customization

Tutorial design across institutional lines

Research shows that students in higher education increasingly prefer a blended learning experience, and view Web-based resources as a flexible means of learning new skills and reviewing prior content for better understanding.¹ Web-based tutorials, screencasts, and other forms of interactive digital content are desirable additions to a library's suite of learning support options, yet e-learning resource development necessitates expertise, labor, and time that runs in increasingly short supply.

Our collectively stretched environment necessitates using open educational tools and building adaptable instructional materials to share with peers and colleagues. Many libraries and learning organizations have created useful tutorials and videos in the form of open educational resources (OER) that can be plugged directly into a research guide or modified locally using provided source files. Shared e-learning materials offer vetted and embeddable lessons with minimal development time, but also preclude the possibility of adding institution-specific messaging, branding, or other contextual modifications. Objects that are locally modifiable provide the opportunity to include local detail, but also present technical and development challenges.

Begin Research: UCI's share-alike information and research literacy tutorial

In this article, three librarians present their experiences with a local modification OER scenario that took place between 2009 and 2011, creating, sharing, and adapting an award-winning Web tutorial designed to

introduce students to basic information literacy and research skills and concepts. Cathy Palmer, head of education and outreach at University of California-Irvine (UCI) Libraries, worked with instructional designers to develop the original "Begin Research" tutorial, then led a team that included Lia Friedman, head of public services and instruction and outreach librarian for UC-San Diego's Arts Library, and other representatives from participating UC libraries, to adapt it into a form usable by all ten UC libraries. Char Booth, instruction services manager and e-learning librarian at the Claremont Colleges Library, is one of several librarians who have adapted "Begin Research" for application outside of the UC system.²

In an effort to encourage others to take advantage of this adaptable tool for institutional or consortial use, the source files, which include the graphic template, Flash programs, and other digital media objects, have been stripped of most of their UC branding and context-specific details to facilitate easier local implementation. Customizing this tool requires some degree of modification to represent the resources of a given academic library; however, subsequent sections of this article demonstrate the scale and nature of these modifications.

Catherine Palmer is head of education and outreach at the University of California-Irvine Libraries, e-mail: cpalmer@uci.edu, Char Booth is instruction services manager and e-learning librarian at the Claremont Colleges Library, e-mail: charbooth@gmail.com, and Lia Friedman is head of public services and instruction and outreach librarian for University of California-San Diego's Arts Library, e-mail: lgfriedman@ucsd.edu

© 2012 Catherine Palmer, Char Booth, and Lia Friedman

Round one: Tutorial development

In early 2009, a small group of instruction librarians at UCI took a look at their existing library tutorial, which was then more than five years old, and realized it was outdated and in dire need of revision. Happily, the UCI Libraries' Department of Education and Outreach had an unexpected budgetary surplus that could be applied to an entirely new tool.

After careful consideration of several options that included revising the existing tutorial, creating a new tutorial using in-house library resources, or outsourcing production, they decided to follow the third option

and collaborate with the university's Distance Learning Center (DLC) on a new project.

Although work began with an assumption that UCI librarians would revise their existing tutorial, instructional designers at DLC quickly convinced them to start from scratch. As the project progressed, the library team developed a ten-step project design and production process, which they have used, with some slight modifications in subsequent projects. In the interest of brevity, the basic steps are:³

1. Identify the need: "Why are we doing this?"
2. Decide on content and audience.
3. Outline the content.
4. Decide on a graphic look and feel.
5. Create the content.
6. Instructional design.
7. Program the tutorial.
8. User test.
9. Review and edit.
10. Final review for quality control.

Need, audience, and content goals (steps 1 and 2) dictated that the tutorial would focus on information literacy concepts for novice to intermediate researchers, and that it would teach "mechanical" skills only to the extent necessary for learners to use introduced resources. In other words, the team tried to avoid the "push this button to make this happen" approach as much as possible in favor of

providing a context for a novice beginning the process of developing a research project.

The library/DLC team tried to replicate a basic research process in the sequence of the tutorial's

six modules (step 3), from parsing a research assignment (Begin Research) to a simple explanation of the process of creating knowledge (Knowledge Cycle) to library research strategies for locating books (Find Books) and articles (Find Articles). The last two modules cover basic search and advanced search skills, again with an emphasis on the fact that most, if not all, information location resources include these features in some way.

Throughout steps 4 through 10, DLC personnel were generous with advice on how to move from simply providing content to incorporating varying levels of interactivity and animation that would more meaningfully engage students in the material. Librarians devoted considerable thought to important design aspects such as navigation—choosing a tabbed bar across the top allows a student to select any of the six modules at any point in the tutorial, as well as a lefthand navigation menu for moving through the subsections in each unit (see Figure 1). Exercises and learner



Figure 1. Landing page for the live UCI "Begin Research" tutorial, covering the process of research from defining a researchable topic to advanced search techniques. The full tutorial can be viewed at www.lib.uci.edu/how/tutorials/LibraryWorkshop/begin.html. Visit this article online for detailed images.

self-assessments are integrated throughout each module to enhance engagement and retention. The tutorial was coded in HTML with Flash animations and interactive components, and contains several Camtasia videos modeling search strategies.

At UCI, among the most important decisions made in early planning stages was to clearly delineate the division of labor and responsibility between the librarians and DLC personnel—which included a project manager, an instructional designer, a graphic designer, and a programmer—with librarians functioning as content experts and providers. The designation of a project manager from each unit (one from the library, one from DLC) facilitated the coordination and collaboration between the units. All final decisions were made and communicated between the people in these roles, which eliminated second-guessing and confusion. Using the DLCs sound advice and expertise, all final decisions about each aspect of the tutorial were made by the librarians.

In total, UCI Libraries paid DLC \$24,000 for their work, a price determined as justified as the library gained the benefit of DLC's extensive experience with online instruction and instructional design, not to mention programming expertise not readily available in the libraries. This contractual collaboration was a new working model for UCI librarians, who were extremely satisfied with the end result—a graphically pleasing, up-to-date, interactive tutorial with content that reinforced information literacy principles and employed active learning techniques. Pride in the new product was validated when the UCI Libraries "Begin Research" tutorial was selected as an ACRL PRIMO Site of the Month for August 2010.

Round two: Collaborative revisioning

As Palmer was managing UCI's tutorial revision product, she was also a member of the UC Libraries Heads of Public Services (HOPS), a cross-UC libraries group. When HOPS received news about the UCI "Begin Research" tutorial's recognition, Donald Barclay, then

UC-Merced head of public services, proposed that a group of librarians (one representative from each campus that wanted to participate) adapt the tutorial for use by all of the UC Libraries as an alternative to each library creating its own tutorial.

Participating campuses (UC-Berkeley, UC-Davis, UC-Los Angeles, UC-Merced, UC-Riverside, UC-San Diego, and UC-Santa Barbara) each determined their own rationale for joining the shared revision effort. After hearing about Booth's successes during an earlier adaptation of the tutorial for UC-Berkeley, UC-San Diego was tempted to go its own route with the source files, but chose instead to work with the larger group in order to more quickly implement the generic UC-wide version. UC-San Diego experienced good results in the past with systemwide services, such as the Question-Point 24/7 reference system for serving chat and e-mail patrons collaboratively across the UC campuses, and hoped to continue to use collaborative public services resources while measuring the feasibility of creating online instruction materials for all UC libraries.

The group worked on a short timeline, beginning June 2010 and with a finished UC-wide "Begin Research" tutorial ready for use by Fall 2010. Throughout the process, each module of the UCI original was effectively "deconstructed" by the representatives of each UC library, who updated and generalized place-specific language and images, such as screenshots and references to UCI's local catalog and campus. The group consulted extensively with colleagues at their own campuses and communicated feedback and suggestions for improvement with the UC-wide group. This approach gathered perspectives from those not working closely with the process, which had the valuable effect of highlighting confusing language and overly generic terms, as well as considering specific links for the more individualized sections of the tutorial.

In November 2011 Palmer surveyed the original tutorial revision group, in part to further assess their motivations for joining the

project. When asked about the main impetus for participating in adapting or integrating a tutorial for local use, many campuses mirrored UC-Merced's response, which expressed a desire to reduce duplication of effort: "We wanted to leverage work done at a campus for our own purposes. In the past campuses have often done very similar work, each dedicating resources to creating similar tools etc."

UC-Davis expressed another common

theme, the lack of local expertise and labor: "We'd hoped to develop our own tutorial to highlight key research concepts and tools,

but were hampered by staffing shortages and access to/experience with tutorial software applications."⁴

During this process, several libraries outside of the UC system also expressed interest in adapting the tutorial for use in their own environment. One such modification by the Claremont Colleges Library (CCL), which serves seven liberal arts institutions in Los Angeles County, is described in the next section.

Round three: Local adaptation

As demonstrated by the UC-wide collaboration, the challenge of customizing open learning objects is due in part to the context-specificity of so many aspects of library operations. While the skills taught by "Begin Research" are broadly useful to novice researchers and academic libraries share many areas of common functionality, operational details differ significantly between institutions (e.g., online resource

availability, interlibrary loan and circulation processes, catalog layout, and librarian support options). Therefore, when versioning this or any other open source learning object that isn't explicitly generic and transferable, the content and structure of the original must be closely examined.

After arriving at CCL in Spring 2011, Booth quickly identified Web-based learning options as a major area of development need. Rather than starting from scratch on a

self-paced research skills learning object, she requested the source files of the cross-UC "Begin Research" tutorial from Palmer to test their potential to achieve local e-learning

goals. A small project team consisting of Booth and Natalie Tagge (instruction librarian) followed a rapid review and modification effort that required less formal communication than the large-scale UC collaboration described in earlier sections. Beginning in mid-July 2011 and ending in late August 2011, Booth and Tagge's tutorial revision involved the same type of deconstructive review and adaptation, which had already been genericized to a large degree by the cross-UC collaboration.

Booth and Tagge first considered revision delegation for each part of the project among their two-person team, and work was subdivided based largely on expertise and interest. For example, Tagge spearheaded creating screenshots along with re-scripting and recording Camtasia tutorials, while Booth edited HTML and Flash objects and troubleshooted other aspects of Web coding. The content adaptation occurred in several phases—after source files were installed on



Figure 2. Updated landing page of the UC-wide "Begin Research" tutorial, compare to Figure 1. Although the basic navigation and graphic design is retained, the header now represents all of the UC Libraries.

a development server, Booth completed a global find and replace of all UC-specific language with CCL-specific references and created a new banner, thus branding the learning object for the CCL context. Tagge then analyzed each screen of the tutorial in sequence, noting suggested changes in a shared Google doc, which Booth used to complete content and design revisions.

This approach created a running changelog of recommended and executed content and design changes, facilitated virtual collaboration between Booth and Tagge, and provided a document that could be referred and added to for future revision needs. Once revision work was near final, professional and student staff were enlisted to review the tutorial to identify content and concept errors.⁵

Collaborative e-learning: Additional adaptations

Several months prior to its UC-wide implementation, Booth had spearheaded a local adaptation of “Begin Research” for UC-Berkeley, and thus had experienced her first adaptation of the tutorial in an institutional setting similar to UCI, one which shared a number of access and discovery tools (Melvyl catalog, etc.). However, transitioning the generic UC-wide tutorial to the

liberal arts environment necessitated deeper structural revisions. Take, for example, Figures 3 and 4, which compare screen 8 of the “Begin Research” find books module at the UC campuses and the CCL, respectively.

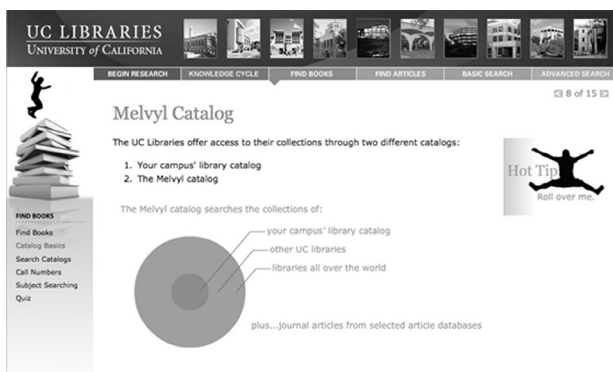


Figure 3. UC system collection access options.

Figure 3 shows the UC system tutorial's original illustration of collection access options available via their shared catalog Melvyl, while CCL's version in Figure 4 shows a revised approach to tutorial animations and text based on the importance of describing interlibrary loan and other discovery and access options not discussed in the original version.

A more extensive example of “Begin Research” tutorial adaptation is by the University of Notre Dame Libraries, which employed elements of the Knowledge Cycle module for its local Pot of Gold tutorial.⁶

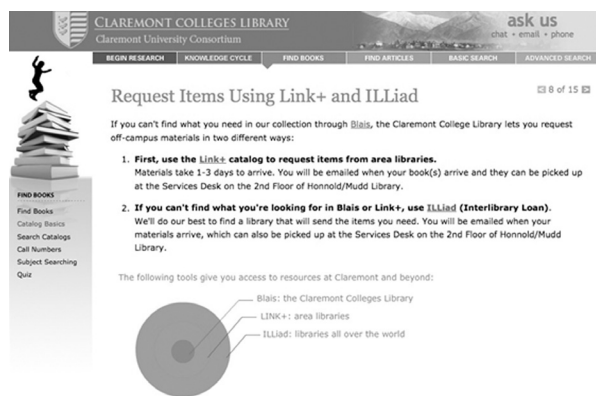


Figure 4. CCL collection access options.

Future needs and suggestions

Like any other digital learning object, the “Begin Research” tutorial is a work in progress that can benefit from revisions and enhancements.

Its Flash-based activities, animations, and quizzes provide a level of interactivity that can sustain learner engagement, but they also create barriers for users with disabilities (particularly for those who rely on screen-readers) as well as complications for users

with mobile devices that prevent Flash from rendering accurately.

While the majority of tutorial content is accessible to users with screen readers and mobile devices, a non-Flash dependent and smaller tutorial version optimized for Web accessibility and mobile use is a clear future need.

Analytics tracking is invaluable in understanding how a Web-based tutorial is used (in an in-depth or cursory fashion) and integrated into the campus learning management system and library guides. Installing Google Analytics code on each tutorial screen at CCL has made it possible to understand where users discover Start Your Research, the number of pages they view, their time spent interacting with the learning object, search terms, and referral sites that lead them to the tutorial, the locations they tend to exit and enter from, fluctuation in use over the semester, and more.

Analytics tracking is invaluable in understanding how a Web-based tutorial is used (in an in-depth or cursory fashion) and integrated into the campus learning management system and library guides. Installing Google Analytics code on each tutorial screen at CCL has made it possible to understand where users discover Start Your Research, the number of pages they view, their time spent interacting with the learning object, search terms, and referral sites that lead them to the tutorial, the locations they tend to exit and enter from, fluctuation in use over the semester, and more.

Analytics tracking is invaluable in understanding how a Web-based tutorial is used (in an in-depth or cursory fashion) and integrated into the campus learning management system and library guides. Installing Google Analytics code on each tutorial screen at CCL has made it possible to understand where users discover Start Your Research, the number of pages they view, their time spent interacting with the learning object, search terms, and referral sites that lead them to the tutorial, the locations they tend to exit and enter from, fluctuation in use over the semester, and more.

Conclusion

It is our hope that sharing different perspectives on creating and adapting an online tool designed to teach information literacy and library research skills across institutions will encourage others to build on this work in their own environments. Through obstacles and compromises, our collective experience of shared learning object development confirms the power of collaboration, the strength of open content, and, perhaps most importantly, the soundness of the Japanese proverb that “None of us is as smart as all of us.”

Notes

1. Dahlstrom, Eden, Tom de Boor, Peter Grunwald, and Martha Vockley, with a foreword by Diana Oblinger. The ECAR National Study of Undergraduate Students and Information Technology, 2011 (Research Report). Boulder, CO: EDUCAUSE Center for Applied Research, October 2011, available from www.educause.edu/ecar.p.27.

2. In the spirit of resource sharing, the authors have prepared an open source version of the “Begin Research” tutorial available to download at <http://tinyurl.com/begin-research-tutorial>.

3. For a more complete version of the tutorial development process, see www.libraryconference.com/dw/programme/Presentations/Wednesday/Wogan_Suite/Palmer_plan_and_produce.pdf.

4. Although several UC libraries originally expressed the intent to modify the source files once the basic tutorial was complete, as of this writing, none have done so.

5. The Claremont Colleges Library “Start Your Research” tutorial can be viewed at <http://libraries.claremont.edu/howto/researchtutorial/begin.html>, and is now profiled from a number of areas of the CCL Web site, embedded as an introductory research tutorial in learning management system (Sakai) courses, and highlighted as a just-in-time resource in many research guides.

6. The Notre Dame tutorial can be viewed at <http://www.library.nd.edu/instruction/potofgold/>.



Figure 5. Google Analytics on CCL tutorial page.