Scaling Instruction to Needs

Updating an Online Information Literacy Course

Sarah LeMire

Sarah LeMire *is the First Year Experience and Outreach Librarian at Texas A&M University, College Station, Texas. Previously, she was Assistant Head of Research and Information Services, J. Willard Marriott Library, University of Utah, Salt Lake City, Utah.*

*Correspondence concerning this column should be addressed to **Barry Trott**, RUSQ Editor, 7770 Croaker Rd., Williamsburg, VA, 23188; email: btrott@wrl.org.*

Scalability is a buzzword in both libraries and higher education these days. As library budgets continue to tighten and technology continues to advance, libraries are flipping classrooms and deploying technology in order to better scale our instructional efforts. The University of Utah is no different. Several years ago, the library moved away from the standard one-shot workshops offered to the University's undergraduate writing requirement course, Writing 2010, and replaced it with an online information literacy course. The transition has largely been successful, both at reducing the number of low-impact one-shot workshops our librarians teach, and also at involving instructors in information literacy. However, changes in personnel, technology, and curriculum prompted a recent revision and updating of the library's information literacy course.

TRENDS IN ONLINE INFORMATION LITERACY

Many academic libraries are harnessing new technologies in order to create effective, scalable methods of instruction. Research has shown that student performance improves as a result of in-person and online instruction.[1] It has also shown that online instruction can be just as effective as in-person library instruction.[2] Online instruction is being adopted by libraries in a wide variety of formats; the literature is filled with articles discussing instructional innovations including independent online tutorials,[3] flipped classrooms,[4] and for-credit online courses.[5] Librarians are also embracing new pedagogical techniques, such as active learning strategies to engage students with information literacy materials, in an effort to make their online information literacy efforts more effective for students.[6] The styles and structure of online information literacy tutorials, modules, and courses are being continually updated to reflect advancements in technology and in pedagogy, and efforts that we considered cutting edge a decade ago can now seem out of date.

BACKGROUND

Writing 2010 is the University of Utah's undergraduate writing requirement course, serving more than 2,500 students each year. In the fall 2014 semester, there were seventy-three sections of Writing 2010 offered by fifty-one instructors, many of whom are first-time graduate student instructors. Writing 2010 is offered in online, in-person, and hybrid formats; in fall 2014, more than 10 percent of Writing 2010

sections were at least partially online. The Marriott Library has provided information literacy instruction in support of Writing 2010 for decades, historically based on a one-shot workshop model. In recent years, the library transitioned to a new model, patterned after the University of Texas's successful train-the-trainer model,[7] which at the Marriott Library involved an online information literacy course embedded in LibGuides and complementary involvement in the Writing 2010 colloquium, a course required for all new Writing 2010 instructors.

THE CASE FOR CHANGE

In 2013, librarian responsibility for Writing 2010 changed hands, and this transition prompted a review of the information literacy portion of the course. While the course was popular with students and with the Writing and Rhetoric Studies Department's Writing 2010 coordinator, there were limitations to the course structure that impeded its complete success. DeWald et al. argue convincingly that successful instructional design must include assessment,[8] but the software supporting the Writing 2010 course, LibGuides, offered only a rudimentary survey feature for assessments. The survey function in LibGuides collected student response data into a spreadsheet that had to be manually disseminated to their instructors, and overall student participation in the assessments was low, leaving instructors and librarians unable to effectively evaluate the course's efficacy.

Another persistent issue involved continuing instructor requests for librarians to conduct one-shot workshops in their classes. When the online course became available, the library ceased offering in-person workshops, instead expecting instructors to rely upon the online course and the train-the-trainer session in the Writing 2010 colloquium. However, a number of instructors continued to make requests for librarian visits to their classes, often noting that they felt uncomfortable answering questions about library research or that they felt that the librarians were better equipped to teach the material.

Finally, the Writing and Rhetoric Studies Department's Writing 2010 coordinator position changed hands, first in the summer of 2013 and again in the summer of 2014, prompting significant changes to the Writing 2010 curriculum. These modifications required accompanying changes to the library information literacy course in order to fully support the newly revised Writing 2010 learning objectives.

UPDATING THE COURSE

The first and most important step toward developing a new information literacy course was connecting it to the Writing 2010 curriculum and its new coordinator. Following Fink's "Backward Design" principles and the University of Utah's Quality Course Framework,[9] librarians developed

an alignment grid (see appendix) to map the newly updated Writing 2010 learning objectives onto the ACRL Information Literacy Competency Standards for Higher Education and threshold concepts from the most recent draft Framework for Information Literacy for Higher Education. (Note: The ACRL Information Literacy Competency Standards were rescinded by the ACRL Board of Directors at the ALA Annual Conference in June 2016.) The completed alignment grid was then brought to the Writing 2010 coordinator as a visual aid to help the librarians explain how the structure and objectives of the information literacy course we were developing mapped directly onto the department's course objectives. The alignment grid clearly illustrated how the library course is intended to support, rather than compete with, the instructors' learning objectives. This conversation earned us buy-in from the Writing and Rhetoric Studies Department, and it also gave us the opportunity to discuss the new Writing 2010 syllabus and identify areas where the information literacy course could better support Writing 2010 learning objectives.

Another initial step in developing a new information literacy course was selecting a new course platform. When evaluating the existing information literacy course, it was apparent that LibGuides was an insufficient platform for the scale of the course. It was extremely time- and labor-intensive to use the LibGuides survey function to collect student assessment data for over 2,500 students each year, and to disseminate that data to the appropriate instructors. The library convened a working group comprising the library's Writing 2010 information literacy coordinator, a group of teaching librarians, and an instructional designer/librarian. This group agreed to move the Writing 2010 information literacy course into the University's course management system, Canvas. A number of other libraries also have used their course management systems for information literacy instruction.[10] Canvas was the best choice for our library for several reasons: librarians were already familiar with it; it would not require any IT support to implement; it had fairly robust assessment options; and, most importantly, Writing 2010 instructors were being required to use Canvas for their individual sections for the first time. Instructors would be able to copy the information literacy course directly into their own Writing 2010 section courses, making it an integrated part of the larger course rather than distinguished as a separate element.

The next step in updating the course was to develop its structure. The process of aligning Writing 2010 learning objectives with information literacy standards and threshold concepts provided us with a beginning structure, and conversations with the Writing 2010 coordinator helped us determine how many course assignments would be devoted to the information literacy course. The information literacy course working group settled on a structure of five modules, four of which would be directly correlated to a Writing 2010 learning objective. The first module was not assigned a learning objective, but was instead constructed

as a brief introduction to the library and the information literacy course.

Another significant structural change was the choice to incorporate multiple modalities for as many instructional topics as possible. Research has shown that different learning styles can be overlooked in an online environment;[11] a simple strategy toward accommodating multiple learning styles is to offer instruction in multiple formats.[12] In the updated Writing 2010 information literacy course, the library offers students the option between a static LibGuide/web page and a closed-captioned tutorial that was recorded in house, by a vendor, or by another library.

In keeping with another trend in higher education the new information literacy course incorporates badges for a gaming element. Badges are increasingly popular in school, public, and academic libraries for their ability to help illustrate mastery of a skill that is not easily graded.[13] A number of libraries are incorporating badges into online information literacy courses, including the University of Central Florida and the University of Arizona.[14] Canvas comes equipped with several external badging apps, including Canvabadges, BadgeStack, and BadgeSafe. The library chose to pilot the use of Canvabadges, and one of the library's graphic design experts created a badge for each of the information literacy course's five modules (see figure 1). Completing Module 1: About the Library would earn the Novice badge; Module 2: Locate Library Materials would earn the Seeker badge, Module 3: Evaluate Resources earns Inquirer, Module 4: Managing and Citing Sources earns Executive, and Module 5: Reflection earns Crackerjack. In order to encourage student participation in the badging program, librarians requested and received funding from the library administration in order to reward students with a library-branded prize when they earned the final badge.

Finally, one of the most important reasons for updating the course, and one of the biggest challenges to implementing it, was the need for useful assessments that could provide timely feedback to students, instructors, and librarians. Canvas offers a fairly robust quiz feature that provides four different quiz types, each with a dozen question formats. Canvas also can grade automatically many types of quiz responses, providing instant feedback. While research suggests that timely feedback to library web tutorials can improve student performance,[15] we determined that it was not feasible for the Writing 2010 librarian coordinator to respond to 2,500 students per year, and an auto-grading feature was a reasonable, if limited, proxy for librarian feedback. Accordingly, a series of multiple-choice quizzes was developed with each quiz designed to require students to interact with library resources to answer the questions. Although it was not feasible for librarians to respond to student responses, we also implemented reflective assignments in the form of short-answer questions that were graded automatically as credit/no credit. These questions were intended to cause students to think about their topics and their larger purpose within the Writing 2010 course.

Figure 1. Canvabadges for the information literacy course. Image credit: Amanda Crittenden, used with permission.

The information literacy course, rebranded as Writing 2010 Library Instruction, was completed in summer 2014 and feedback was solicited from teaching librarians from around the library as well as from student employees of the library. After receiving positive feedback from all reviewers, the completed course was sent to the Writing 2010 coordinator to be copied into the Writing 2010 Canvas shell course that provided to Writing 2010 instructors in fall 2014.

SIGNIFICANT CHALLENGES

Perhaps the most significant challenge to overcome when implementing the new Writing 2010 Library Instruction course has been the wide variety of instructor expectations and skill sets. These challenges fall into three categories: Canvas support, syllabus changes, and one-shot workshop requests.

Canvas Support

While all Writing 2010 instructors were required to use the content management system Canvas for the first time in the fall 2014 semester, only new instructors enrolled in the Writing 2010 colloquium received any formal Canvas training. Canvas training is offered to all instructors at the University on a by-appointment and drop-in basis, but many returning Writing 2010 instructors relied on librarian instructions and guidance to successfully implement the information literacy course. Most instructors followed the initial plan, which was to copy the information literacy course into their section's Writing 2010 Canvas course, but several instructors instead opted to link their Canvas courses to the information literacy course. The lack of uniform Canvas expertise among all fifty-one instructors led to significant librarian time expenditure in providing Canvas support for the course. Instructor unfamiliarity with Canvas also led to some unfortunate mishaps within the course, including the accidental duplication of modules and quizzes. The Writing 2010 Library Instruction Canvas course has required daily monitoring over the fall 2014 semester to ensure that instructors and students are navigating the course appropriately, as well as significant time expenditure on the part of the librarian to ensure that instructors are receiving the tech support that they need.

INFORMATION LITERACY AND INSTRUCTION

Syllabus Changes

The Writing and Rhetoric Studies Department's Writing 2010 coordinator is responsible for developing the Writing 2010 syllabus, which is used by all first-time Writing 2010 instructors. However, seasoned Writing 2010 instructors historically have been permitted to develop their own syllabi for the course. This means that, while many of the Writing 2010 instructors are using the syllabus that the information literacy module is constructed to support, a number of instructors are not. While the learning objectives for all Writing 2010 classes remain the same, the order in which students progress through the material may change substantially, requiring that the information literacy course and librarian support for the course remain available throughout the entire semester. Additionally, the variation in Writing 2010 syllabi affects the library's research consultation offerings. The library offers drop-in consultation times for Writing 2010 students to supplement the online course each semester, but these consultations are timed to meet the point of need for those students whose instructors are following the standard syllabus. Students whose instructors have implemented significant variations from the standard Writing 2010 syllabus are accommodated on an individual basis, and instructors who have substantially altered the syllabus may require additional support to ensure that the online course works for their class.

One-Shot Workshop Requests

Although the Writing 2010 Library Instruction information literacy course is intended to be a complete replacement for one-shot workshops, each semester there are a number of instructors who request an in-person librarian visit as a supplement to the online information literacy course. This is particularly true in the fall semester, when a number of new graduate students are teaching Writing 2010 for the first time. Approximately one-third of fall semester Writing 2010 courses receive a supplemental in-person librarian visit, based exclusively on individual instructor requests. These visits, taught largely by the Writing 2010 information literacy coordinator but also by teaching librarians throughout the library, typically cover the same material covered in the online course. While these one-shot workshops are redundant, they are valuable to instructors, many of whom are first-time instructors and who express a level of discomfort in teaching about the library. We hypothesize that these fall one-shot workshops serve primarily to teach the Writing 2010 instructors, especially the new instructors, about the library. The number of one-shot workshop requests drops significantly in the spring semester, when only one-fifth of instructors typically request an in-person visit, suggesting that some instructors may feel more comfortable teaching about the library and information literacy once they have seen a librarian workshop. In addition to providing requested one-shot workshops, we have increased the number of librarian visits to the Writing 2010 instructor colloquium,

and we continue to pursue increased involvement with the colloquium as a more time-effective method of increasing instructor comfort with information literacy.

CONCLUSIONS

Flexibility has been crucial as we have developed the new Writing 2010 Library Instruction course. Curriculum, coordinator, and syllabus changes have all required the library to change gears quickly. Canvas's wiki format and the information literacy course's modular design have made it relatively easy to make small adjustments to the course very quickly (e.g., swapping out a segment on Zotero for a segment on NoodleTools the week before classes began). But beyond a flexible course structure, librarian flexibility has been crucial. Working with fifty-one individual instructors, it has been important to respond to each instructor as an individual with their own needs and objectives, and to work with them—whether they need a little extra technology help, or they would really like a librarian to come teach a one-shot workshop for them, or whether their students will need to set up research consultations with a librarian. The time investment over the past several months has been significant, including establishing the new information literacy course and working with instructors and students during the semester, but we are optimistic that the investment now will pay dividends in future semesters, when the information literacy course will only require minor tweaks and updates and when instructors are fully confident in their understanding of Canvas and in their ability to teach their students about information literacy.

References

1. Penny M. Beile and David N. Boote, "Does the Medium Matter?: A Comparison of a Web-Based Tutorial with Face-to-Face Library Instruction on Education Students' Self-Efficacy Levels and Learning Outcomes," *Research Strategies* 20, no. 1–2 (2004): 57–68.
2. Susan L. Silver and Lisa T. Nickel, "Are Online Tutorials Effective? A Comparison of Online and Classroom Library Instruction Methods," *Research Strategies* 20, no. 4 (2005): 389–96; Carol Anne Germain, Trudi E. Jacobson, and Sue A. Kaczor, "A Comparison of the Effectiveness of Presentation Formats for Instruction: Teaching First-Year Students," *College & Research Libraries* 61, no. 1 (January 2000): 65–72, http://dx.doi.org/10.5860/crl.61.1.65; James Nichols, Barbara Shaffer, and Karen Shockey, "Changing the Face of Instruction: Is Online or In-Class More Effective?," *College & Research Libraries* 64, no. 5 (September 2003): 378–88, http://dx.doi.org/10.5860/crl.64.5.378.
3. Kelly A. Donaldson, "Library Research Success: Designing an Online Tutorial to Teach Information Literacy Skills to First-Year Students," *The Internet and Higher Education* 2, no. 4 (Winter 2000): 237–51; Paul J. Bracke and Ruth Dickstein, "Web Tutorials and Scalable Instruction: Testing the Waters," *Reference Services Review* 30, no. 4 (2002): 330–37, http://dx.doi.org/10.1108/00907320210451321; Nicole Johnston, "Is an Online Learning Module an Effective Way to Develop

Information Literacy Skills?," *Australian Academic & Research Libraries* 41, no. 3 (2010): 207–18, http://dx.doi.org/10.1080/00048623.2010.10721464.

4. Sara Arnold-Garza, "The Flipped Classroom Teaching Model and Its Use for Information Literacy Instruction," *Communications in Information Literacy* 8, no. 1 (2014): 7–22, accessed July 8, 2016, http://files.eric.ed.gov/fulltext/EJ1089137.pdf; Ilka Datig and Claire Ruswick, "Four Quick Flips," *College & Research Libraries* News 74, no. 5 (2013): 249–57, accessed July 8, 2016, http://crln.acrl.org/content/74/5/249.full.

5. Jessica Long, John J. Burke, and Beth Tumbleson, "Research to Go: Taking an Information Literacy Credit Course Online," *Journal of Library & Information Services in Distance Learning* 6, no. 3/4 (2012): 387–97; Yvonne Mery, Jill Newby, and Ke Peng, "Why One-Shot Information Literacy Sessions Are Not the Future of Instruction: A Case for Online Credit Courses," *College & Research Libraries* 73, no. 4 (2012): 366–77, http://dx.doi.org/10.5860/crl-271.

6. Nancy Dewald et al., "Information Literacy at a Distance: Instructional Design Issues," *Journal of Academic Librarianship* 26, no. 1 (January 2000): 33–44; Gwendolyn J. Reece, "Critical Thinking and Cognitive Transfer: Implications for the Development of Online Information Literacy Tutorials," *Research Strategies* 20, no. 4 (2005): 482–93; Paul L. Hrycaj, "Elements of Active Learning in the Online Tutorials of ARL Members," *Reference Services Review* 33, no. 2 (2005): 210–18.

7. Travis Willmann, "Teach-the-Teacher Approach Wins Award," *Tex Libris* (blog), *University of Texas Libraries*, June 2, 2010, http://blogs.lib.utexas.edu/texlibris/2010/06/02/teach-the-teacher-approach-wins-award.

8. Dewald et al., "Information Literacy at a Distance," 39.

9. L. Dee Fink, *Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses* (San Francisco: Jossey-Bass, 2013); "Phase 1 – Design," *Quality Course Framework Tutorial*, accessed November 7, 2014, https://utah.instructure.com/courses/33024/pages/phase-1-design.

10. Pamela Alexondra Jackson, "Integrating Information Literacy into Blackboard: Building Campus Partnerships for Successful Student Learning," *Journal of Academic Librarianship* 33, no. 4 (July 2007): 454–61.

11. Lori S. Mestre, "Matching up Learning Styles with Learning Objects: What's Effective?," *Journal of Library Administration* 50, no. 7/8 (2010): 808–29.

12. Melissa Bowles-Terry, Merinda Kaye Hensley, and Lisa Janicke Hinchliffe, "Best Practices for Online Video Tutorials in Academic Libraries: A Study of Student Preferences and Understanding," *Communications in Information Literacy* 4, no. 1 (2010), 17–28, accessed July 8, 2016, http://eduscapes.com/instruction/articles/bowles.pdf.

13. Nicole Pagowsky, "Keeping Up With. . . Digital Badges for Instruction," *Keeping Up With . . .* (blog), *Association of College & Research Libraries*, September 2013, www.ala.org/acrl/publications/keeping_up_with/digital_badges.

14. "Badges," *University of Central Florida infolit Information Literacy*, accessed November 7, 2014, http://infolit.ucf.edu/faculty/badges; Nicole Pagowsky, "Test-Driving Purdue's Passport Gamification Platform for Library Instruction," *ACRL TechConnect* (blog), *Association of College & Research Libraries*, January 28, 2013, http://acrl.ala.org/techconnect/?p=2676.

15. Bracke and Dickstein, "Web Tutorials and Scalable Instruction," 336.

APPENDIX. WRITING 2010 ALIGNMENT GRID

Course Learning Objective/Outcome	ACRL Standard	ACRL Framework	Previous W2010 Lesson	Revised W2010 Module	How Learning Will be Assessed	Teaching/Learning Activity
Conduct secondary research to write in an academic context.	1.2: The information literate student defines and articulates the need for information.	Scholarship as Conversation	Lesson 1	Module 1	Pre-Assessment Quiz	• Video tutorial – Who are your librarians? • Video tutorial – How is library information organized? • Supplementary readings, links
Use database and other online search tools.	2.2: The information literate student constructs and implements effectively-designed search strategies. 2.3: The information literate student retrieves information online or in person using a variety of methods. 2.4: The information literate student refines the search strategy if necessary.	Research as Inquiry; Searching as Strategic Exploration	Lesson 2, Lesson 3 Parts 1 & 2	Module 2	Multiple-choice quiz	• Usearch (video tutorial; subject guide) • Academic Search Premier (video tutorial; subject guide) • Google Scholar (video tutorial; subject guide) • CQ Researcher (video tutorial; subject guide)
Demonstrate knowledge of a variety of online genres and source types.	2.3: The information literate student retrieves information online or in person using a variety of methods.	Information Creation as a Process	Lesson 2 Parts 2 & 3, Lesson 3 Parts 1 & 2, Lesson 4 Part 3	Module 2	Multiple choice quiz	• Usearch (video tutorial; subject guide) • Academic Search Premier (video tutorial; subject guide) • Google Scholar (video tutorial; subject guide) • CQ Researcher (video tutorial; subject guide)
Write using digital media appropriate to the rhetorical context.	4.1: The information literate student applies new and prior information to the planning and creation of a particular product or performance. 4.3: The information literate student communicates the product or performance effectively to others.	Information Creation as a Process	N/A	Module 3	Multiple choice quiz	• Video introduction to digital media issues • Guide on finding images
Identify and use reliable sources that are appropriate to the topic.	3.2 The information literate student articulates and applies initial criteria for evaluating both the information and its sources. 3.4: The information literate student compares new knowledge with prior knowledge to determine the value added, contradictions, or other unique characteristics of the information.	Authority Is Constructed and Contextual	Lesson 3 Part 3	Module 3	Multiple choice quiz	• Video introduction to 5Ws and H test • Subject guide on 5Ws and H test
Use a citation style consistently, attributing words and/or ideas to the appropriate author.	2.5: The information literate student extracts, records, and manages the information and its sources. 5.2: The information literate student follows laws, regulations, institutional policies, and etiquette related to the access and use of information resources. 5.3: The information literate student acknowledges the use of information sources in communicating the product or performance.	Information Has Value	Lesson 4	Module 4	Multiple choice quiz	• Video introduction to citing sources – Why? What does it tell us? • Subject guide on citation management systems • Copyright & plagiarism subject guide • Student code of conduct