Information literacy "learning" via online tutorials: A collaboration between subject specialist and instructional design librarian

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Abstract:

As the American higher education paradigm shifts from a traditional classroom instruction model to a distributed learning model, academic libraries must update library instruction methods to allow for more flexible delivery of content. Distance students particularly need instructional content that can be accessed anywhere, at any time. This article seeks to explore one approach to creating a flexible online learning environment by studying the design and implementation of online research tutorials for two sections of an Introduction to American Ethnic Studies course at Kansas State University.

Keywords: distance education | computer-assisted instruction | computer-assisted instruction/evaluation | subject guides

Article:

INTRODUCTION

Advances in educational technology have dramatically changed the landscape of library instruction. In addition to a growing number of distance education classes, face-to-face classes are also using course management software to deliver hybrid learning experiences for on-campus students. The American higher education paradigm is moving away from traditional classroom instruction to a distributed learning model where students are able to learn anywhere, at any time. The essence of the old instruction paradigm is "to transfer or deliver knowledge from faculty to students."[1] In the new learning paradigm, on the other hand, "a college's purpose is not to transfer knowledge but to create environments and experiences that bring students to discover

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[1] Robert B. Barr and John Tagg, "From teaching to learning–a new paradigm for undergraduate education," *Change 27* (November/December 1995):12–25. Education Full Text, WilsonWeb (accessed June 19, 2009), 15 (quotation).
2. Barr and Tagg, "From Teaching to Learning," 15.

and construct knowledge for themselves."[2] This paradigm shift gives students options to customize learning to their own styles, schedules, and habits. This shift is particularly significant for distance education as it diminishes its distinction from on-campus education. It is critical for academic libraries to update their traditional delivery of one-shot, face-to-face library instruction in order to provide a flexible learning environment for students. This article seeks to explore one approach to creating such a learning environment by studying the design and implementation of online research tutorials for the Introduction to American Ethnic Studies course at Kansas State University.

BACKGROUND

Introduction to American Ethnic Studies is a freshman level course that "introduces students to the major concepts related to ethnicity and to some of the major American ethnic groups."[3] For their major assignment, a personal ethnography paper, students typically come to the library's multicultural resource center for resources. From its inception until early 2009, the center housed a collection of over 2000 items featuring elements of multiculturalism. The Dow Multicultural Resource Center (DowMRC), renamed in 2001 to reflect Dow Chemical's sponsorship, is located in Hale Library, the main library on K-State's campus. Until early 2009, the space included the previously mentioned targeted collection of reference books, international newspapers, revolving displays of new books with multicultural themes in the K-State Libraries collection, and some display space to showcase major multicultural events on campus and in the community. Through fall 2008, the DowMRC also had its own service point, where Reference Generalists and students helped users with a variety of questions. This area served as the primary point of contact for students completing the personal ethnography paper and other assignments for American Ethnic Studies courses. The DowMRC director and staff conducted the majority of library instruction and orientations for students in American Ethnic Studies.

During the 2008–2009 academic year, a number of strategic decisions were made regarding the DowMRC. A new Multicultural Studies Librarian was hired to serve as a liaison with American Ethnic Studies and other campus units and to coordinate the efforts of the DowMRC. The service point previously located in the DowMRC was closed as part of a larger effort to consolidate library service points. During spring and summer 2009, the collections housed in the DowMRC were integrated with the general collection. The space became a flexible-use area with soft seating, group study and meeting space, and a flat-screen television tuned to an international news station.

As these changes took place, the new Multicultural Studies Librarian was engaged in building a relationship with the American Ethnic Studies program, whose assignments had previously relied heavily on DowMRC resources. During summer 2009, the first session during which the DowMRC's collections were dispersed throughout Hale Library, the Multicultural Studies Librarian worked closely with the instructors of two sections of the Introduction to American Ethnic Studies course. Summer 2009 marked the first time that a section of this course was offered entirely online.

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[2] Barr and Tagg, "From Teaching to Learning," 15.
[3] Kansas State University, "American Ethnic Studies," 2009–2010 Undergraduate Catalog, http://catalog.k-state.edu/content.php?catoid=13&navoid=1312 (Accessed June 23rd, 2009).

K-State offers many courses through its Division of Continuing Education, and on-campus courses increasingly have an online component through K-State Online, our homegrown course management system. K-State Libraries offer a variety of services for both distance and on-campus users, including: remote access to e-journals and databases; synchronous and asynchronous virtual reference services; online subject guides; short online tutorials; and pages for specific user groups (including distance learners) in K-State Online. The Libraries currently do not have a librarian devoted to distance learners or distance education programs. Since the early 2000s, two subject specialists and the Head of Interlibrary Services have been largely responsible for working with the Division of Continuing Education to promote the Libraries' distance services, but distance instructors and students generally work directly with the subject specialist for their department or program.

In this tradition, the Multicultural Studies Librarian was the subject librarian responsible for instruction to both sections of the summer 2009 Introduction to American Ethnic Studies course. To accommodate the needs of the online section of the course, he collaborated with K-State Libraries' Instructional Design Librarian to develop a dynamic course page for the class. The Instructional Design Librarian is a member of the Library Instruction Unit, whose focus is on general instruction, particularly for first and second year students. Since the needs of this course align closely with the goals and objectives of the Library Instruction Unit, this collaboration was ideal. The modules developed to support American Ethnic Studies could be designed for reuse in a variety of instructional environments.

LITERATURE REVIEW

Effectiveness

Before designing and implementing online tutorials, it is important to establish the effectiveness of this mode of learning. In 2000, librarians at SUNY Oswego compared the pre- and post-test results of a group of students who completed a Web-based tutorial to another group of students who received traditional in-person instruction. Their results showed that "students learn as much from an online tutorial as from traditional in-class instruction and that they are satisfied with online instruction."[4] Results of a similar study at the University of Albany in 1998 also showed that "there is no difference in the effectiveness of the two types of instruction, Web and live, based on number of correct answers."[5]

Content and Design

In a survey of thirty-four online tutorials, Viggiano observed that all but three had "interactive games and quizzes that provide an immediate response to the student, live or simulated searches

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[4] 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. Education Full Text, WilsonWeb (accessed June 19, 2009), 385 (quotation).

[5] Carole Ann Germaine, Trudi E. Jacobson, and Suz 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. Education Full Text, WilsonWeb (accessed June 19, 2009).

of the library catalog or databases, or fill-in-the-blanks or mouse-over activities that gave immediate feedback on the users' answers."[6] Dewald examined the twenty Web-based library tutorials selected by the American Library Association's Library Instruction Round Table (LIRT) Research Committee as examples of online library instruction. She concluded that Web-based instruction should include "some sort of active and collaborative learning," "graphics as well as text," and "clear objectives for the student in the form of an outline."[7] In their study of academic library users'' preference of delivery methods for library instruction, Robertson and Jones found that there was an "overall preference for the 2D webpages approach," particularly when compared to an audio-only approach.[8] In a case study of developing learning tutorials at Toronto's Seneca College, Donaldson observed that "breaking down instruction tutorials into manageable sections (modules), while remaining linear and allowing for the step-by-step acquisition of skills, prevents the user from becoming overwhelmed with information."[9]

Video and Screencasting

Using video is one way to integrate interactivity into an online learning environment. Libraries have a long history of using video for both promotional and instructional purposes. According to Mizrachi and Bedoya, "public libraries began partnering with local cable television networks on television and video projects in the 1970s."[10] Academic libraries soon followed, taking advantage of the potential of video and television to reach large numbers of student users.[11] These early projects required a significant investment of resources, financial and otherwise. The increased availability and decreased cost of desktop video production software allows academic librarians to quickly and easily produce short, Web-accessible videos for their users. These projects range from tours and short narratives promoting library services to focused instructional modules. Web-accessible videos can provide just-in-time library instruction for any users, but can be particularly useful for distance learners. Librarians at Texas A & M University noted that the use of streaming video "allows the library to reach patrons in a very unique way, one that is not constrained by weather, parking space availability, scheduling, or library hours."[12] These advantages are particularly helpful for off-campus or remote users. Arnold et al. drew similar

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[6] Rachel G. Viggiano, "Online Tutorials as Instruction for Distance Students," *Internet Reference Services Quarterly 9*, no. 1/2 (2004):37–54, 44 (quotation).

[7] Nancy H. Dewald, "Transporting Good Library Instruction Practices into the Web Environment: An Analysis of Online Tutorials," *The Journal of Academic Librarianship 25*, no. 1 (January 1999):26–31. Education Full Text, WilsonWeb (accessed June 19, 2009), 31 (quotation).

[8] Michael J. Robertson and James G. Jones, "Exploring Academic Library Users' Preferences of Delivery Methods for Library Instruction: Webpage, Digital Game, and Other Modalities." *Reference & User Services Quarterly 48*, no. 3 (Spring 2009): 259–269. ProQuest Research Library, ProQuest, http://www.proquest.com/ (accessed July 6, 2009), 259 (quotation).

[9] Kelly Donaldson, "Library Research Success: Designing an Online Tutorial to teach Information Literacy Skills to First Year Students," *Internet and Higher Education 2*, no. 4 (2000):237–251, 241 (quotation).

[10] Diane Mizrachi and Jaclyn Bedoya, "LITE Bites: Broadcasting Bite-Sized Library Instruction," *Reference Services Review 35*, no. 2 (2007):249–256. Library Literature and Information Science, WilsonWeb (accessed June 25, 2009), 250 (quotation).

[11] Mizrachi and Bedoya, "LITE Bites," 251 (quotation).

[12] Daniel Yi Xiao, Barbara A. Pietraszewski, and Susan P. Goodwin, "Full Stream Ahead: Database Instruction Through Online Videos," *Library Hi Tech 22*, no. 4 (2004): 366–374. Library Literature and Information Science, WilsonWeb (accessed June 25, 2009), 250–251 (quotation).

conclusions while designing a new Online Help site at Marshall University Libraries.[13] They mounted several streaming videos featuring students in common library settings, and explained, "[b]ecause the videos convey information in an entertaining and involving way, they enable the off-campus student (or any student not working face to face with a librarian) to have a more personalized exchange with the Libraries."[14] Screencast-based tutorials demonstrating online library tasks are also popular. These tutorials can "facilitate the support and instruction of electronic resources in a manner that appeals to the user,"[15] filling in the gap that exists between overly complex text-based tutorials and in-person assistance from library staff. As academic libraries become more engaged in the creation of videos and video tutorials, opportunities to promote these videos will expand beyond library Websites to include sites like YouTube and Google Video[16] and platforms like iTunes U.[17]

Collaboration

Incorporating Information Literacy into the curriculum requires the cooperation of teaching faculty. Matthies identifies communication as one of the key aspects of building a collaboration model between faculty and librarians, as it allows librarians to "proactively promote what the library could offer the course instructors prior to the course ever having been taught." In addition, "success in service delivery also leads to more success and has the potential to create more allies."[18] In a case study of librarian/faculty collaboration at the University of Massachusetts at Amherst, the authors devised a 4-step process to incorporate information literacy skills into the curriculum. The authors concluded that, "once a relationship has started with the faculty and librarian, it can be built upon to improve the student learning experience."[19]

As the technologies used in libraries evolve, so do librarians' roles. In Cassner and Adams' study, over half of subject librarians surveyed reported "instructional design or Web page design/updating as a responsibility," even though "the extent of subject librarian collaboration with distance librarians, instructional designers, and teaching faculty varies."[20] Collaboration and cooperation within the library is also critical to the success of creating library tutorials.[21]

GOAL & OBJECTIVES

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[13] Judith M. Arnold, Floyd Csir, Jennifer Sias, and Jingping Zhang, "Does Anyone Need Help Out There? Lessons from Designing Online Help." *Internet Reference Support for Distance Learners 9*, nos. 3–4 (2004):115–134.

[14] Arnold, et al "Does Anyone Need Help Out There?" 131.

[15] Xiao, et al "Full Stream Ahead," 366.

[16] Mizrachi and Bedoya, "LITE Bites," 255.

[17] John Paul Michel, Susan Hurst, and Andrew Revelle, "Vodcasting, iTunes U, and Faculty Collaboration." *Electronic Journal of Academic and Special Librarianship 10*, no. 1 (Spring 2009). http://southernlibrarianship.icaap.org/content/v10n01/michel_j01.html (accessed June 25, 2009).

[18] Brad Matthies, "The Road to Faculty-Librarian Collaboration," *Academic Exchange Quarterly* (Winter 2004):135–140, 139 (quotation).

[19] Lori S. Mestre, Selma Etter, Lyle Cracker, "Faculty and Librarians Spice-Up Instruction," *Academic Exchange Quarterly* (Winter 2004):106–110, 110 (quotation).

[20] Mary Cassner and Kate E. Admas, "The Subject Specialist Librarian's Role in Providing Distance Learning Services," *Journal of Library Administration 48*, no. 3/4 (2008):391–410, 408–409 (quotation).

[21] Eve M. Deil and Theresa K. Flett, "The Role of Cooperation in Creating a Library Online Tutorial," *The Reference Librarian 40*, no. 83 (2004):175–182.

The goal of the online tutorial was to help students develop their information literacy skills. To reach that goal, we set forth the following objectives:

1. Market the concept of online tutorials to the teaching faculty;
2. Create a series of modules that allow students with no previous library research experience to learn how to use the library's resources to complete their class assignments;
3. Assess the students' expectations of and satisfaction with the tutorials.

We recognized that faculty buy-in was critical to the success of this project. Without faculty collaboration, it was unlikely students would even use the tutorials. In the past, the libraries provided one-shot, face-to-face classroom instruction to the American Ethnic Studies students; with these online modules, we were introducing the faculty to an entirely new mode of student learning. We promoted the online tutorials in the summer of 2009 to coincide with the first online section of an American Ethnic Studies course. This provided an ideal opportunity to introduce the online tutorials since it would not be possible to offer any face-to-face classroom instruction sessions for this particular section. We tailored the tutorials to the class assignments, and the instructors of the American Ethnic Studies classes (both on-campus and online) were enthusiastic to try them.

While it is a long-term goal to create a set of tutorials that cover the entire spectrum of information literacy concepts, the main objective of this set of tutorials was to provide a basic introduction to our library's resources specifically applicable to the students' assignments. Due to the intensity of summer classes, we focused on making each module short, simple, and directly related to the class assignment.

Since this was a new project, it was important to assess the users' expectations and level of satisfaction in order to make improvement to the tutorials. Therefore, we designed short pre- and post-assessment student questionnaires. These results are discussed in greater detail in the "Results" section.

DESIGN & IMPLEMENTATION

Our plan for this project was to create a set of resources, including: a general American Ethnic Studies subject guide; a course page for the Introduction to American Ethnic Studies course; and a series of modules serving as an online tutorial for the course. In developing the tutorial, we planned to integrate existing Web-based instructional modules from K-State Libraries with newly created modules designed with the needs of this course in mind.

Where new modules were needed, the subject librarian and the Instructional Design Librarian collaborated on their development. For the first module, the subject librarian developed a script, which the Instructional Design Librarian translated into a video demonstration. The Instructional Design Librarian also trained the subject librarian on Adobe Captivate, the screencasting software used at K-State Libraries.

Since our objective was to create a step-by-step guide for students with no library research experience, we divided up the entire "course" into seven modules. We estimated that each

module would take less than fifteen minutes to complete, translating to a maximum of 105 minutes of "class time." Each module would build on what the student learned in the previous one. Dewald pointed out that "modules that provide information in small blocks, breaking it up into parts and subparts with summaries and reviews, help learners absorb material gradually and organize the material in their own minds."[22]

We felt that the best way to present the tutorial would be to let the students explore it individually. This is similar to taking a "virtual field trip" in an online class, where the instructor directs the students to a specific online location and allows them the freedom to choose how to "take in the surroundings" within an allotted time period. This also aligns with the distributed learning paradigm, in which the objective is not to instruct but to let the students learn.

Module 1 begins with a video introduction to the library's homepage and a link to the multipage subject guide. The idea is to demonstrate the most important features of the homepage, such as the instant messaging reference feature, the library's hours, and the library catalog/databases links.

Module 2 focuses on the assignment and how to avoid plagiarism, concepts we believed would require more than short video presentations to explain. Currently, two 2D Webpages explain these concepts. Adding interactivity is a long-term goal, as the literature indicates that it "contributes to learner motivation, aids learning by providing opportunity for students to practice skills, and allows for assessment of student understanding at the completion of the learning module."[23] The advantages of simple 2D Webpages in this instance, in addition to Robertson and Jones' finding that users tend to prefer this type of presentation overall,[24] include students' ability to refer back to information as they work on their research project.

Module 3 includes two static Webpages and one dynamic one, all of which deal with evaluating resources. Of these three pages, two were developed in-house. Both of these pages are part of our Assignment Planner, an organizational tool based on the University of Minnesota's Assignment Calculator that leads students through the research process. One of the static pages, developed by the University of Maryland University College, provides a thorough explanation of resource evaluation, which students can read and refer to later. By including three pages that cover the same general topic in different ways, we were able to accommodate different learning styles and information delivery preferences.

Module 4 focuses on search strategy development and includes one static Webpage and one PDF document. The Webpage deals with the issue of keyword vs. subject searching, which can be difficult for undergraduates. The PDF, developed in-house, is broader and covers the process of developing a search strategy, from defining a topic to building a search. This can be saved to a student's computer or printed out for future reference.

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[22] Nancy H. Dewald, "Web-based Library Instruction: What is Good Pedagogy?," *Information Technology and Libraries 18*, no. 1 (March 1, 1999): 26–31. ProQuest Research Library, ProQuest, http://www.proquest.com/ (accessed July 21, 2009), 29 (quotation).

[23] Dewald, "Web-based Library Instruction," 29.

[24] Robertson and Jones, "Exploring Academic Library Users' Preferences, 267."

Module 5 begins to address how students can find specific types of resources, in this case journal and magazine articles. We include two videos, one demonstrating a search in ProQuest Research Library, and one dealing with the slightly more sophisticated concept of mining an article for new search terms. A static Webpage from Duke University is also linked. This page clearly and concisely distinguishes between scholarly and popular articles, another potential source of confusion for undergraduates.

Module 6, which focuses on finding books, includes two short videos demonstrating how to use our catalog for simple searches, and how to get a book from our collection that is currently checked out. In the future, we plan to incorporate more information about resource retrieval for distance students.

Module 7, the final module in the series, focuses on what tends to be a student's final task: citations. We link to a static Webpage maintained by the Library Instruction unit, which compiles resources for citations at K-State and beyond. Linked from this page are Flash tutorials, tools like CiteIt (our citation builder), databases with their own citation functions, and bibliographic management tools like RefWorks and Zotero. Also included in this module, and particularly important for this course, is a guide from another university library on creating annotated bibliographies.

Overall, these modules were meant to provide students with a solid introduction to the research process in general, and to using our Libraries' resources specifically to support that research process. We preferred content developed at K-State Libraries whenever possible, but did include links to materials created by other libraries when they addressed a topic in a particularly effective way. Due to increased demands on our time, we were unable to create more than a few entirely new modules for this course. Those that we did create, including the introductory video in Module 1, can be easily reused in other learning environments and on the Libraries' Website. Creating modules that are flexible, embeddable, and scalable is the most efficient use of resources, particularly in a time of economic stress.

ASSESSMENT AND RESULTS

We conducted pre- and post-assessment tests using an online survey in K-State Online. We chose this mode of data gathering because online surveys tend to have a high response rate and fast response time, and are relatively inexpensive. The standardized questions make measurement more precise, and observer subjectivity is eliminated. It was also convenient for the students as it was available on their course management software platform. We are also aware of its limitations. Lack of face-to-face contact might have impacted the data quality. The standardized questions allowed for limited flexibility in responses. Instructors of both the on-campus class and the online class encouraged students' participation by offering extra credit.

Objective 3, above, was to learn about the students' expectations of and satisfaction with the tutorial. Overall, the twenty-nine students who completed the pre-assessment reported fairly high expectations for the modules, averaging nearly 3.88 on a scale of 1–5. The online class and the face-to-face class reported little difference in expectations. General satisfaction, based on students' post-assessment responses to how helpful they found the tutorials, was slightly lower,

with twenty-six students reporting an average of 3.69 on a scale of 1–5. Students in the in-person class reported lower satisfaction rates than online students, though the difference was small at .36 points.

We also wanted to learn how many students reported that they actually used the modules. Of the twenty-six students that responded to the post-assessment question regarding use, only two reported that they did not use the tutorials at all. Unfortunately, only three students reported that they used the tutorials in full. The remaining respondents reported a mix of using some of the tutorials (eight students) and using most of the tutorials (thirteen students). The breakdown of reported use varied little between the two sections.

While more analysis is needed, it is clear that, while most students expected and reported the tutorials to be at least moderately helpful, very few were motivated to complete them. The use of these surveys with the two summer sections of the course was meant as a pilot test. As we develop and modify the surveys, we plan to include questions that will help us capture student impressions of what might make the tutorial more helpful, or might make them more likely to use the modules.

RECOMMENDATIONS AND FUTURE DIRECTIONS

Overall, we successfully met our three objectives. We marketed the idea of the online tutorial to faculty, who were willing to encourage their students to participate. We created a modular tutorial that presents information literacy and library research concepts. We got a high response rate for our pre- and post-assessment surveys, which allowed us to gather data on our users' expectations and satisfaction.

The online tutorial is a work in progress, and this pilot test with two sections of Introduction to American Ethnic Studies provided us with useful information for future improvement. The low rate of tutorial completion must be addressed. Making the modules more relevant to assignments is one possible way to motivate students to complete the tutorial. We also plan to place more emphasis on interactivity by adding questions during and after each module. By requiring the students to answer questions, we are giving them a head start on their research assignment, the personal ethnography paper. As there are more sections of the same class in a regular semester than in the summer, the subject librarian will need to market this mode of information literacy learning to more teaching faculty. The subject librarian plans to suggest to the faculty to make the learning modules mandatory for their classes; therefore faculty buy-in will be even more crucial than before.

We would also like to expand the assessment surveys to test the information literacy skills of the students before and after using the tutorials. As we fine-tune the surveys, we hope to get richer data about students' baseline information literacy skills so that we can more accurately assess the change that occurs as they use the tutorials.