Developing and Maintaining Instructional Web Sites: The Library Starter Kit

Deborah A. Murphy

The library may not see a student until an actual research project or paper is due, at which point the student often has a very narrow focus and limited interest in learning about the process of research. Point of need assistance, while intrinsically wonderful, can be problematic given a limited number of librarians and Reference Desk hours. Librarians are faced with the equivalent of someone who has never been behind the wheel of a car needing to drive from Chicago to New York. The non-driver may only want to know where to put the key and which is the pedal that makes it go. It can be difficult to explain why one might need to know how to read a map, what are the rules of the road, or where the gas goes.

Development

There has been a natural progression in the methods and formats librarians have used to reach new library users. These range from one-on-one assistance, to group tours, specialized orientation sessions, and individual class instruction, as well as self-serve resources such as self-guided tours, handouts, maps, information notes and so on. The World Wide Web (WWW) presented another potential way to reach students. Increased campus access to the Internet from numerous computer labs and high speed connections in dorm rooms, and off-campus dial-in modem access meant a resource that was available 24 hours a day from wherever a student could connect to the Internet. The Internet also allowed access for librarians when at the Reference Desk, teaching a library research course, or providing assistance to distance learners.

In early 1996, I developed an Instructional Improvement Grant to create the first Library Virtual Tour on the WWW. The grant provided funding for a limited number of student developer hours to work with me on both designing a tour as well as enhancing with my web development skills. The first version of this tour was made available in August of 1996 and provided a graphic and textual overview of both the physical layout and resources available in the McHenry Library.

The process left me with a rudimentary knowledge of HTML and image editing, and essential knowledge

Deborah A. Murphy is instruction coordinator and reference librarian, University of California, Santa Cruz

to maintain the tour but not yet enough to develop additional sites without additional skills and experience. The completion of the virtual tour led to an invitation from a Computer Science professor to submit a class project for her multi media publishing course. I enrolled in the class and learned along with the students as both project client and team developer of a new project "The Library Starter Kit." The Kit would consist of not only the virtual tour, but a guide to starting the research process, a collection of web-based subject guides to research and a directory of current on-line library workshops.

By being both a student in the course as well as project client, I had the opportunity to work on all portions of the new Starter Kit as well as provide detailed content and immediate feedback on design and organization. The first version of this site became available in 1997 (Murphy, 1997) The next phase of development occurred in the subsequent advanced multi media publishing course. By this time new technologies had come along that allowed for greater interactivity with a web site, we redesigned the entire virtual tour, creating a new navigational metaphor that utilized frames, Java scripting and MacroMedia Director software. The metaphor we chose, an elevator, provided a more consistent and "real life" framework as students moved around the tour. Links were available to both the non-frames tour as well as the text version so that users had a choice of environments.

In spring of 1997, I joined a campuswide group of faculty and Information Technologies staff to develop UCSC's first on-line literacy course available on the WWW. Through a set of four self-paced modules, students are provided an introduction to browsing the Web, using E-mail at UCSC, connecting with on-line Library Resources, using Newsgroups, and understanding Netiquette. This course, the newest addition to the Starter Kit, is aimed at users new to the on-line environment or those with differing starting points in terms of initial computer skills and interests. It provides a solid grounding in basic skills as well as an introduction to more specialized applications used locally at UCSC.

Maintenance

Web site development is only half the picture. The care, maintenance and continued growth of a web site can be a major commitment. Initially, this meant unifying the diverse sites onto a centralized server, ensuring that all sites met ADA accessibility requirements developed by

the University, and negotiating appropriate locations on the existing Library web site.

Additional workload issues became evident after the initial development of the Starter Kit. The size of many of these sites meant that keeping pages current became a major workload issue. High on the maintenance list were the subject guides, which require new additions, as well as revisions to content and format of existing guides. How best to handle these workload issues has yet to be addressed, but I still retain primary responsibility for all sites. As more instructional sites were developed, it became clear that not all of these would become part of the Starter Kit. A new Library Instruction page was created that incorporated all instruction based sites into one annotated list with links to each.

Other maintenance issues that came to light over time. Given that eight different students had contributed in some way to the developments of the various sites, a significant amount of editing and programming had to be done to ensure some consistency in style and layout of both the final product and the HTML coding. Although all sites require updating and revisions, some are more demanding than others. Time has become one of the scarcest resources available. Funding for one time projects is easier to obtain than long term staffing. So authoring a web site often means being responsible for its care and well being.

Implementation

The Library Starter Kit can be used in a number of instructional environments:

• A resource available on demand to users browsing the library home page - The individual components of the Starter Kit are available in several places on the Library web site. Links back to the Starter Kit home page give users an overview of additional resources. A prominent position on the McHenry Library home page and campus wide email announcements have also helped users locate the Starter Kit.

• A link for instructors to add to their own WWW pages—UCSC faculty who create WWW based resources for their classes can place a link to the Library Starter Kit directly on their class pages.

• A lecture tool for library instruction—All of our library instruction sessions, whether conducted in the library or elsewhere on campus, include an on-line component. The Starter Kit has links to many of the key introductory resources that are presented during these

sessions. This simplifies preparation for library instructors and gives students a single starting point to remember when they search on their own. The Virtual Tour in particular allows us to vividly bring the library into the classroom, presenting maps and images of materials as we lecture.

• Online Literacy instruction—In addition to course-integrated instruction, the NetTrail provides on demand instruction for students needing an introduction to a set of skills while in pursuit of another topic (e.g. students doing Library research, but who need an introduction to using the WWW), Faculty and staff who may need additional Internet instruction, assistance for off-campus students, and integration into a UCSC Information Literacy program.

Evaluation

As most web site developers know, evaluating usability is important for any site that you expect others to search and use. There are a variety of methods (e.g., surveys, questionnaires, focus groups), of which we chose field testing using student volunteers. It was an enlightening and sometimes humbling experience watching how they used the interface, how they used resources or navigational features, if they used or needed help features, and their general reaction to the site. This mix of qualitative and quantitative feedback was a key part of the design process. The UCSC NetTrail demonstrates of the impact of usability testing. Initially comprised of four tutorials with differing approaches to their content, feedback from user observations led to revisions that produced a more unified voice, layout, and navigation scheme. As one might guess, it was much easier to rework a web site early in the authoring process than after investing in extensive development. Usability testing performed on earlier sites instructed development of later ones, and new design and authoring features on these more recent sites have informed changes and revisions to earlier resources.

Another way to evaluate use is to track statistics on web site usage. While bigger does not necessarily mean better, tracking the hits to a page can be a one way to detect poor linkage, confusing layout, invisibility, or lack of interest. There are also utilities that allow you to see who has placed links to your pages, another way to gauge user audience and interest. Our web server can generate weekly and cumulative statistical usage reports. This has been a very useful means of tracking patterns and increases or decreases in usage. The numbers below reflect the cumulative number of times the top home page for each site has been visited:

Site	Dates	Visits
The Library Starter Kit	8/1/97–2/14/99	9,858
McHenry Virtual Tour	8/1/97–2/14/99	4,069
Constructing Your Research Paper	8/1/97–2/14/99	57,017
Subject Guides	8/1/97–2/14/99	17,175
UCSC NetTrail	11/22/97–2/13/99	4,039

Areas with lower than expected usage prompted a re-examination of the pages themselves for usability, as well site visibility and accessibility. It was also interesting to note which sites are being used by nonUCSC researchers. We were surprised to see how heavily the "Constructing Your Research Paper" site was used and discovered that it is a featured site in several on-line web directories, specifically those aimed at students new to the research process.

Conclusion

There is a difficult balancing act to maintain between the hours spent in developing and updating web pages vs. the return in terms of instructional value. Evaluation may take many forms, from usage statistics to individual feedback. Additionally, continued web development requires continuing acquisition and practice of development skills, keeping up with software and hardware changes, and adequate time to maintain existing sites. Educating one's colleagues about web site authoring issues may become almost as important as developing one's own skills—the more others know of what is involved in developing and maintaining web sites, the greater chance of creating an environment which supports publishing in this new format.

Librarians face many of the same issues other academics do in publishing and developing resources in new media and formats. Peer evaluation can be a key part of advancement and promotion, and work outside the more traditional areas of publication and research can be difficult to evaluate. Those publishing in nontraditional multi media may find that acknowledgment of the value of their work may not come primarily from the resource per se, but from the articles or papers published in more traditional formats that discuss the resource (Guernsey, 1997).

The Library Starter Kit remains very much a work in progress. It will require a continuing commitment to maintain and expand existing components, add new WWW search and multimedia features, and develop additional resources. Given the changing nature of technology, it can be safely assumed that most of these resources will need to migrate to new formats in the not so distant future. In spite of these issues, it has been an exhilarating experiment in exploring innovative approaches to instruction and has expanded the range of the Library's instructional programs.

Web sites:
The Library Starter Kit
http://bob.ucsc.edu/library/ref/instruction/skit
McHenry Library Virtual Tour
http://bob.ucsc.edu/library/tour
The UCSC NetTrail
http://nettrail.ucsc.edu
Constructing Your Research Paper
http://bob.ucsc.edu/library/ref/instruction/research/libres.htm

Subject Guides
http://bob.ucsc.edu/library/ref/instruction/refguides/noframes_index.html
Online workshops
http://bob.ucsc.edu/library/ref/workshops
McHenry Library Instruction
http://bob.ucsc.edu/library/ref/instruction

References

Guernsey, Lisa. Scholars who work with technology fear they suffer in tenure reviews. *Chronicle of Higher Education* v.43, n.39 (June 6, 1997): A21 (2 pages).

Murphy, D.A. "The Library Starter Kit: using new technologies for training and instruction." In: *Proceedings. ACM SIGUCCS 1997 User Services Conference XXV. Are You Ready?* 25th SIGUCCS '97 Conference, University and College Computing Services 25th User Services Conference, Monterey, Calif., USA, 9–12 Nov. 1997. New York, N.Y.,: ACM, 1997. 239–46. (http://bob.ucsc.edu/library/ref/instruction/siguccs)