
The Internet Navigator: An Online Internet Course for Distance Learners

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ABSTRACT

THE *INTERNET NAVIGATOR* (www-navigator.utah.edu) ONLINE COURSE is a cooperative effort to use new technologies to teach information literacy competencies. The *Internet Navigator* has been used successfully by thousands of students since 1995. A team of librarians and Web development professionals in Utah continue to work together to develop the Web course for online and distance learning students. This article describes the history and recent developments of this course. In 2000, the course was redesigned and revised to meet changing needs of students, to include the latest information resources and technologies, and to focus on information literacy competencies, particularly for distance learners. New developments to manage the ongoing maintenance and funding of this multi-institutional online course are also described.

INTRODUCTION

Librarians are at the center of the intersection of new technologies, products, and services. Librarians select, provide, and deliver the information resources critical for academic education and scholarship. Librarians not only provide access to resources but also teach students, faculty, academic staff, and the general public about information literacy—i.e., how to find, evaluate, and effectively use information. For distance and other online learners, this information is primarily made available on the World Wide Web. Instruction librarians develop detailed information literacy competency programs and methods for teaching and assessing these

educational programs (Oberman, Lindauer, & Wilson, 1998). Librarians increasingly use online resources to support information literacy competencies and basic library and Internet skills instruction. Students increasingly access library resources at a distance, and library instruction programs must meet the needs of distance learners (ACRL, 1998).

A major challenge facing reference and instruction librarians is providing students with excellent quality and up-to-date Web-based library and Internet skills instruction while not duplicating time-intensive efforts at every academic institution within a state or region. This is important in Utah where academic institutions cooperatively purchase and share a core group of online information resources through the Utah Academic Library Consortium (UALC). Utah librarians have found cooperative efforts to be a practical alternative in this era of dynamic change (Kochan & Lee, 1998). The Internet Navigator course, cooperatively developed by UALC librarians, was created to meet this challenge (Hansen & Lombardo, 1996).

In 1995, although many library catalogs were accessed via the Internet, primarily through Telnet, most traditional library resources, such as periodical indexes, article databases, or online reference resources, were not available on the Internet. From 1995 to 2000, many traditional library research tools, including major periodical indexes, article databases, and many important reference books have been republished for access on the World Wide Web alongside millions of new and unique Web site information resources. Distance learners are able to access many more scholarly academic resources through library Web sites than they were five years ago. New technologies and trends in collection management regularly impact instruction programs. For example, after the widely used Infotrac article database announced its remote access service to home patrons on June 1, 1997 (Rogers, 1997), students needed to learn about remote access to full-text article databases. Since 1995, many students, faculty, and the wider community are exposed to the Internet for e-mail, entertainment, business, and shopping through mass media. Students in 2000 have a much better understanding of the Internet—what it is and how it works. These same students may still have difficulty understanding how to use the Internet to access valuable library resources such as article databases and reference resources not found through popular search engines and Web directories.

Utah's population of distance learners has grown significantly, and the medium of instruction has changed. In 1995 there were several hundred distance learning students at Weber State University (WSU), primarily engaged in correspondence courses. In 2000, there were over 2,000 students enrolled in WSU Online, Weber State's online campus for distance and online learners. On campus students are also using remote access services to access online resources. The numbers of students physically

entering the library are decreasing while Web usage is steadily increasing at Weber State University's Stewart Library. At WSU, most students work off campus more than thirty hours a week. At WSU and many other similar campuses, "on campus" students engage in the library experience as if they were distance learners, and the line between distance and not distance students becomes very blurred. Most of the students enrolled in online courses at WSU live in the local area but choose online education for reasons other than distance. Accurate statewide data on the actual numbers of distance learning students in Utah are unavailable; newspaper accounts have estimated that more than 25,000 students were enrolled in distance education courses in Utah in 1998, with more than 8,000 distance students enrolled at Utah State University (Egan, 1999, C1).

These factors have caused a major shift in what students most need to learn within the realm of information literacy in an online and distance learning environment. In 1995, students needed to learn about the Internet itself. In 2000 they needed to know how to effectively find and use the scholarly content found in Web-based library resources. The Internet Navigator, Utah's first online course, has undergone a major revision to meet the current and future needs of Utah's students. This article summarizes the revision process. Although much of the written and graphical revision has been completed, final editing was done over the Summer of 2000. The New Internet Navigator was launched in Spring 2001. Curricular revisions have coincided with critical changes in the administration and funding of the course for online and distance learners in Utah. Cooperative funding and shared administration and maintenance of the course have been strategically planned to help ensure its ongoing success.

UALC: A MODEL FOR ACADEMIC LIBRARY COOPERATION

How could reference, instruction, and outreach librarians from fourteen diverse institutions with various funding sources come together to meet the challenge of cooperatively developing an online course? UALC was the organizational unit that provided the umbrella structure for their efforts.

There is a long history of cooperation among libraries in Utah. UALC includes fourteen academic libraries at nine public and two private higher education institutions plus the Utah State Library. There are four universities: the University of Utah (Salt Lake City), Utah State University (Logan), Weber State University (Ogden), and Southern Utah University (Cedar City). The four community colleges are: Salt Lake Community College, College of Eastern Utah (Price), Dixie College (St. George), and Snow College (Ephraim). Utah Valley State College (Orem) is the sole state college. "Along with private school UALC members, Westminster College (Salt Lake City) and Brigham Young University (Provo), UALC libraries serve over 151,000 students" (Brunvand et al., 2000, p. 50). The

State Librarian of Utah is also a member of UALC, providing an important communication link with public and school libraries.

Statewide cooperative initiatives to support online and distance learners are not unique to Utah. A number of other states are also using collaborative efforts to better meet the instruction needs of online and distance learners. Of particular note is the Florida Initiative (Madaus & Webster, 1998).

UALC has been able to overcome traditional bureaucratic barriers and has developed many cooperative projects and programs including cooperative borrowing agreements, statewide licensing of databases, document delivery options, cooperative collection development, and the Internet Navigator online library skills course (Morrison et al., 1995). The success of these programs has enabled UALC to receive a statewide pool of academic library funding from the Utah Legislature. Through this funding, students at academic institutions in Utah have access to the same set of core resources, known as Academic Pioneer. Academic Pioneer comprises a wide range of full-text article databases, online periodical indexes, and reference tools (Utah Academic Library Council, 1999).

The availability of a group of databases, shared statewide, reinforced the idea of creating a shared instruction program to support the effective use of these databases. Through cooperation rather than competition, the UALC libraries are able to offer every student a base level of information resources and instruction no matter what tier of institution they are attending and with support for the distance learner.

THE EVOLUTION OF THE COURSE CONTENT

In August 1995, a group of librarians, representing each academic library in the state, met to discuss the possibility of designing an online course. Over the next few months the first draft of Internet Navigator was created. This group hoped to accomplish more with less effort by combining their talents, and expertise, and by sharing their work load and the results of their efforts. Although dividing the overall work load may have made the challenge more manageable, there were still many problems. The challenges in creating an online course for use statewide are theoretical, technological, and bureaucratic. These include:

1. understanding the needs and learning styles of a very diverse student body, including distance learners;
2. cooperatively developing a curriculum that could be used at any institution for multiple purposes;
3. managing a cooperatively developed Web site;
4. integrating the latest Web technologies, including very well-designed graphics;
5. integrating the latest pedagogies for onsite and distance learners; and

6. managing, maintaining, and funding a course that would be simultaneously delivered at multiple and diverse institutions.

The development team of librarians addressed each of these challenges. Development of the course required librarians to accept their new responsibilities for providing services to distance and online learners, and to see these learners as equals to the face-to-face learners they were more accustomed to serving. It also required the development team to engage in the paradigm shifts caused by this new learning environment. This was sometimes a difficult transition, as most members of the team had never had the opportunity to be distance students themselves. Miller (1997) offers an excellent overview of this new learning environment:

This new [distance] learning environment will be marked by several common characteristics. It will:

- Be lifelong, supporting learners through their individual lives as well as their career changes;
- Be learner-centered, giving lifelong learners greater control over the time, place, and pace of study;
- Emphasize both formal and informal collaboration, providing a communications-rich environment for students to work together in teams and to form informal study groups at great distances;
- Emphasize individual inquiry and use of original data and resources rather than lecture and use of prepared texts; and
- Be structured to ensure that learners gain direct experience in solving problems, making decisions, and exploring values both as individuals and as members of teams.

The Internet Navigator development team, through the process of course development, and by engaging in this statewide collaborative experiment, became distance learners themselves. Much of the collaborative development work was Web based, at a distance, and team driven. As the team became richly enmeshed in the new distance learning environment, they were able to use this experience to better understand and assist distance learning students.

The Internet Navigator course is delivered over the Internet using the World Wide Web as its primary protocol. Librarians communicate with students primarily through e-mail. Students work through a series of modules to complete the course. Individual modules are also used as independent teaching tools for self guided learning. The original Internet Navigator course consisted of six modules. These were:

- Module 1—Introduction to the Internet: Introduction to basic Internet Concepts, Netscape Tutorial, Internet Overview.
- Module 2—Communicating Over the Internet: Electronic Mail, Newsgroups, Mailing Lists.
- Module 3—Internet Information Systems: Telnet, Gopher.

- Module 4—Resource Discovery: Internet Catalogs and Directories (Search Engines), Library Catalogs, Evaluating Information.
- Module 5—Providing Information on the World Wide Web: HyperText Markup Language, Web Page Creation.
- Module 6—FTP and Remote Access: Downloading files and dial up access to the Internet.

The overall design of the course was meant to be flexible so that sections of the course could be used independently of the larger course as needed. Each module contained a glossary and a quiz. Students were asked to complete assignments in two of the modules and a final research project. The final research project required students to find five Web sites on a topic of their choosing, write a brief description and evaluation (using established criteria) of the sites, and then use a Web form to create an HTML document.

The course receives up to 35,000 hits a week on the Eccles Health Sciences Library server. Course enrollment and evaluations show that the course is very popular with students. The Navigator has received national and international acclaim as an early model of online instruction.

The Internet and the World Wide Web are both content and delivery mechanisms. In 1995 it was critical for students to understand the Internet as a delivery mechanism. By 1998 the Internet Navigator course was inadequate in its approach to library-based Web content. While students continued to like the class, librarians were dissatisfied with the limitations of what was being taught. The course did not adequately describe the Internet as a content mechanism nor fully address new technologies such as full-text databases or information literacy competencies.

The Internet Navigator was initially created at a time when much of the academic library information was still being delivered primarily in print. In 1998 and 1999, many more traditional library resources, full-text article databases, and reference tools were made available on the Web. A whole new set of information content and instruction needs developed (Oberman, Lindauer, & Wilson, 1998). The critical instruction need had shifted, and students now needed to know how to access the rich scholarly content contained in the many traditional library resources now available on the Web. The Internet navigator needed to be enhanced to facilitate access to scholarly academic resources newly available on the Web.

Beginning in late 1998, the UALC Distance Learning Committee and the UALC Reference/Instruction Committee worked together to discuss providing better online instruction for distance learners statewide. Their efforts were aided by the recent and fortunate influx of new instruction librarians at several institutions in Utah, and the recent gathering of instruction librarians for the LOEX of the West Conference held at Southern Utah University in June 1998. Several new and exciting online

information literacy tutorials were developed outside Utah, including EIL, RIO, TILT, Santa Cruz's Net Trail, and others, providing additional inspiration (see Appendix). The UALC Distance Learning Committee subcommittee on Information Literacy Competencies developed a standardized list of information literacy competencies. By March 1999, a new task force, the Information For Life Task Force, was formed from members of the UALC Distance Learning and Reference/Instruction committees, and work began on rewriting the Internet Navigator Course. The major goals of the project are to:

- promote information literacy in this global and dynamic information technology environment for all types of learners; and
- provide shared library instruction to support each institution's needs, such as a required writing course (English 2010 at most institutions) and the statewide computer and information literacy competencies. These competencies are in accordance with the recommendations established by the Utah State Board of Regents Technology Subcommittee in 1995 (unpublished).

The expected outcomes of the project include:

- the nationally and internationally respected statewide Internet Navigator course will continue to meet the needs of future students and the community at large;
- the latest Web technologies and pedagogy will be used to provide active and creative online experiences for learners;
- this initiative will heavily promote the use of databases and collections supported by UALC and Pioneer funding;
- syllabi, lesson plans, and assignments for the core English writing course (English 2010), and other library instruction will be shared among Utah libraries in order to minimize duplication. This will save an enormous amount of time for instruction and reference librarians across the state;
- standardized learning objectives and information literacy competencies will be established and promoted statewide; and
- this initiative will provide guidelines for faculty to integrate this ready-to-use module in any course, on campus or at a distance.

The Information For Life Task Force met from Spring 1999 through Fall 2000 to completely rewrite and revise the course. As of June 2000, drafts of significant content additions have been written by task force members and posted on the task force Web site/intranet.

The new course will be launched in January 2001. The team evaluated content based on shared goals and specific instructional objectives that promote information literacy competency.

The new Navigator consists now of four modules:

- Module 1 - Introduction to the Internet: Introduction to basic Internet Concepts, Netscape Tutorial, Internet Overview. Understanding the Value of Information.
- Module 2 - Communicating Over the Internet: Electronic Mail, Newsgroups, Mailing Lists. Understanding New Trends in Scholarly Communication.
- Module 3 - Information Navigator
 - Lesson 1. Introduction
 - Intro to the course—How to use this class
 - Getting started (tips on choosing and refining a research topic)
 - Understanding library services
 - Lesson 2. How To Search (Common Search Strategies)
 - How to search (includes Boolean, keyword, subject searching, controlled vocabulary, field searching, truncation, proximity, etc.)
 - Format differentiation (books, articles, etc.)
 - Databases versus search engines
 - Developing search statements
 - Lesson 3. Finding Information
 - Using search engines
 - Finding books
 - Using catalogs, LC call numbers, classification systems, Library of Congress Subject Headings
 - Locating books on the shelf
 - Interactive call numbers exercise
 - Finding a magazine or journal article
 - Choosing and using electronic indexes and reference tools
 - Finding other types of information: government documents, media, special collections/archives
 - Finding experts
 - Lesson 4. Using Information
 - Evaluating information
 - Understanding popular v. scholarly information
 - Note taking tips
 - Documenting sources (including plagiarism and copyright issues)
 - Interactive documentation aid
 - Remote access and licensing
 - Information ethics for students
- Module 4—Web Publishing (revised and rewritten from the old Modules 5 and 6)

Each of the four modules contains several content lessons; each content lesson has interactive exercises and appropriate printable handouts. Each module contains a glossary and a quiz. Content in the old Modules 1

and 3 will be reduced to minimize instruction on telnet and gopher and combined into the new Module 1. The old or original Module 4 (Resource Discovery) was significantly revised in 1996, yet it was this same content that most needed updating again in 2000 due to the advent of so many newly available Web-based library resources and to reflect the latest approaches to teaching information literacy. The old Module 4 is now the new Module 3 (Information Navigator). This content is greatly expanded and enhanced with details on shared full-text article databases, online reference tools, and appropriate research strategies as outlined and summarized earlier. Separate easily printable handouts are being designed for frequently taught topics such as "Using Boolean Logic" and "Understanding the Difference: Scholarly vs. Popular." Students will now be required to effectively find, evaluate, and use online article databases, library catalogs, and reference tools in order to complete their final project. In the old Navigator, students were required to find Web sites only.

The new Module 3 (Information Navigator) is being designed to be used as a stand-alone information literacy course. In particular, it is designed to meet the needs of English 2010 library instruction sessions. Every academic institution in Utah requires students to complete a library skills component within a basic writing course. This course is often, but not always, called English 2010. Although the methods and strategies employed by each UALC institution to teach the library instruction component of English 2010 may differ, lessons within the new Navigator are being designed to be useful to each institution.

The new course will take advantage of Web technologies, including HTML, PERL, CGI scripting, CGIEmail form conversion, electronic mailing lists, and e-mail communication. Web professionals, to simplify usage and further engage online and distance learners, have redesigned the graphics and interactive assignments.

ADMINISTRATION AND FUNDING OF A MULTI-INSTITUTIONAL ONLINE COURSE

The administration and funding of the Internet Navigator online course had been problematic from the beginning. Librarians in Utah realized in 1994 that they needed to work together to create excellent online instruction tools that could be used statewide and beyond. They were also well aware that Utah Governor Mike Leavitt had recently asked the Utah education community to "invest less in bricks and mortar, and more in technology." Leavitt's interest in online and distance learning was strong. He went on to initiate, in cooperation with the governors of thirteen western states, the widely publicized, and controversial, Western Governors [virtual or online] University (Egan, 1999, C1). The Governor's interest in technology also resulted in important legislative funding in Utah, known as the Utah Higher Education Technology Ini-

tiative (HETI). Academic faculty, staff, and librarians were able to apply for HETI funds to explore ways in which new technologies can enhance academic quality and increase learner access to higher education in Utah. HETI funds provided the seed money for the Internet Navigator course from a grant written by Nancy Lombardo and Wayne Peay of the Eccles Health Sciences Library at the University of Utah in cooperation with UALC in 1995.

The initial grant support from HETI was for course development only. One serious problem with the original Internet Navigator course was the lack of a definite plan for ongoing maintenance and support. The authors of the initial grant were more focused on getting one-time funding to cover the start up costs as there were no readily available funding sources for ongoing maintenance and support. Although each of the UALC library directors expressed verbal support for the course, there was no official ongoing financial support for the course from UALC.

Most of the technical and administrative support for the course has come from the Eccles Health Science Library at the University of Utah. Wayne Peay, library director at Eccles, supported the time and effort devoted to basic maintenance of the course by Nancy Lombardo, a primary author of the course and the systems librarian at Eccles Health Sciences Library. Peay and Lombardo also arranged to house and oversee the HTML server for the course on one of the Eccles computers. Due to their ongoing efforts, several major administrative problems have been overcome. For example, during the beta test period in 1995, the Eccles server crashed for three weeks. Lombardo and Peay worked with library directors and systems librarians at the University of Utah Marriott Library and the Salt Lake Community College Markosian Library to establish mirror sites. It was a valuable lesson, and the course has since maintained these mirror sites. Distance learners appreciate knowing that if one university's server is down, two others are available to access course materials.

One of the biggest problems was getting the course listed in each of the college and university catalogs. Some libraries (WSU, SUU) had their own academic departments and a history of teaching for-credit courses. With a history of offering for-credit instruction, they understood the process of getting a course accepted through the academic channels at their institution. Other libraries (U of U, Dixie) did not have past experience or a mechanism for adding a new course and needed to work with other academic departments outside the library to take the course through the curriculum process and to ultimately house the course. Decisions regarding where and how to list the course in course schedules was another challenge. At Weber State University, the Internet Navigator was the first online course offered, and it was initially listed with traditional correspondence courses in the course schedule. A year later it was listed in a new section of the course schedule with other online courses.

The continued maintenance of such a course, with its many ever-changing hyperlinks, was much more time consuming than was originally anticipated. Keeping the course up to date, given the dynamic information environment of the last five years, was also a huge task. Maintenance and updates were completed sporadically by a few individuals. Although the course continued to flourish, it became increasingly difficult to make significant revisions due to lack of statewide planning.

The development of the Information for Life Task Force within UALC offered a major impetus to develop a long-term management plan. This task force includes at least one member from each UALC library and a representative from the Utah State Library Division. The grant proposal of \$25,000 to revise and revitalize the Internet Navigator course was funded in May 1999 by the UALC directors. Three phases of the project were designated: (1) the development phase, (2) the implementation phase and, most importantly, (3) the ongoing maintenance phase. The critical development in the management process was the Information for Life Task Force proposal requesting UALC's commitment to ongoing funding for the maintenance phase. The proposal includes a plan for annually rotating management of the course among institutions. This will relieve the burden from one institution (Eccles Health Sciences Library at the University of Utah) and take advantage of the wealth of talent and interest among reference, outreach, and instruction librarians throughout the state of Utah. Through this funding initiative, it is clear that library directors in Utah see the value of the course and realize the benefits of the collaborative efforts. Funds will be used primarily to support the project director and the development team, primarily UALC librarians, and for other personnel described later.

UALC Information for Life Task Force member librarians are responsible for creating the content, maintenance, and updates. In addition, a freelance programmer and a Web designer/graphic artist have been hired to assist with improving the look of the content, to produce any needed graphics, interactive pages, scripting, and/or programming.

A brief summary of the job descriptions for the three major phases follows:

Project Director (UALC Librarian, will rotate annually)—Oversees project and personnel, reports to UALC directors.

- Development Phase—Hires and trains project personnel with input from the development team, manages content development team, sets up the server.
- Implementation Phase—Trains the maintenance team to load and update modules and units, oversees implementation phase.
- Maintenance Phase—Oversees maintenance team

Content Development Team (UALC Instruction and/or Reference Librarians)—Provides detailed complete content for learning units and assessment tools.

- **Development Phase**—Selects resources for unit development, develops content to meet standardized Information Literacy Competencies criteria, develops assessment tools, works with graphic designer to develop agreed upon layout, plans for marketing and promotion of site, meets with UALC instruction/reference librarians statewide to get input on content needs (meetings in Logan, Cedar City, and Salt Lake).
- **Implementation Phase**—Meets deadlines on content development and assessment tools, implements marketing plan.

Maintenance Team (UALC Instruction and/or Reference Librarians and Graphic/Web Designer)—Provides updates and revisions (may overlap with Development Team in the beginning). Members will rotate in as Project Director.

- **Maintenance Phase**—At least one person per module or major unit. These people will monitor changes in resources and review assessment data. Update links, content, and graphics as required.

Graphic Artist/Web Designer (Part-time, Consultant or Contract—possibly student—should also know HTML and be proficient in graphics layout and design software).

- **Development Implementation, Maintenance Phase**—Work with content development team on design.

Programmer (Part-time, Consultant or Contract—possibly student)—PERL, CGI, HTML, JavaScript, and possibly Java and XML

- **Development Implementation, Maintenance Phase**—Work with content development team on programming needs.

The development and implementation of an Intranet for the task force greatly enhanced team efforts during the 2000 revision. This had not been used previously as a management tool. Due to the extreme distances between some academic libraries in Utah, face-to-face meetings were very time consuming for some team members, and meetings, therefore, occurred approximately every three months. The task force Intranet greatly facilitated team communication. The Intranet consisted of:

- list of team members, names, addresses, phone numbers, and e-mail links;
- copy of Information for Life proposal to UALC Directors, including budget;
- link to team mailing list;
- agendas and minutes of development team meetings;

- list of links to useful information literacy and distance learning Web sites;
- job descriptions;
- drafts of new content outline, with names of those assigned to develop;
- drafts of new content;
- timelines; and
- list of agreed upon information literacy competencies (Utah Academic Library Consortium Information for Life Task Force, 1999).

The development team's efforts to communicate via the Web have enhanced our understanding of many of the issues that students face when studying in a Web-based distance learning environment.

CONCLUSION

The Internet Navigator is a long-term experiment in cooperative online course development and in providing library and Internet instruction for online and distance learners. Librarians throughout the state of Utah are committed to the continued development of the course. This course enables each individual institution to independently utilize collaboratively developed instruction modules based on a proven model of delivery. Instruction modules emphasize shared resources and, through collaboration, librarians share their skills and knowledge about serving the instruction needs of distance learners. A major advantage of the Internet Navigator is the flexibility it provides for those students who wish to develop their information literacy competencies through independent study. This course provides access to the many new Web-based resources and provides instruction in why and how these resources are used for academic scholarship.

The development of an online course in this dynamic information environment requires a strategic plan for regular updates and revisions. Through collaboration and cooperation, reference, instruction, and outreach librarians in Utah have developed and implemented an effective planning process to revise and provide ongoing funding, updates, and maintenance for the Internet Navigator course. This exercise in teamwork has enabled Utah librarians to provide and enhance information literacy competencies for distance learners and for the wider academic community in Utah.

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APPENDIX

Selected Online Library Instruction Tutorials

EIL—Electronic Information Literacy (<http://library.austin.cc.tx.us/research/Guides.htm#tutorials>)

RIO—Research Instruction Online (<http://dizzy.library.arizona.edu/rio/>)

TILT—Texas Information Literacy Tutorial (<http://tilt.lib.utsystem.edu/>)

UCSC NetTrail—(<http://www2.ucsc.edu/nettrail/master/>)

University of Iowa Library Explorer—(<http://www.lib.uiowa.edu/libexp/>)