Today's electronic information environment is more complex than ever, and we all seem to suffer from information overload. Information literacy skills help us find and filter the information we need. In an academic environment, critical thinking skills help students to learn and conduct better research, but, outside of the University, such skills are equally useful and essential to all of us, whether voting, choosing a doctor, or buying a car. As a result, the need for information literacy has become a high priority not only in the library/information environment, but also throughout every phase of our daily life.

Few who use the phrase, information literacy, have a clear idea of what it means. One good way to understand this "portmanteau term" is to define it as comprising a set of competencies. They include the ability to (1) determine how much information is needed; (2) access it effectively and efficiently; (3) evaluate critically the reliability, currency, and appropriateness of information sources; and (4) understand the legal, economic, and social issues surrounding the use of information. Using these four points as goals has challenged the University Libraries to develop library solutions for students. At Western Michigan University, one key solution is an online tutorial called Searchpath.

The Problem of the WWW

Too often students think that all information is available on the Web, and that no other source for background materials is needed for their assignments. They find the Web quick and easy to use through one or more search engines or directories, e.g., Google or Yahoo, but they are not sufficiently aware of many of the Internet pitfalls. The Web pages that they readily locate may not provide the best information to support their research or, even worse, Web pages may provide incomplete, inaccurate, biased, or unreliable information.

Students also are unaware that a large part of the University Libraries' collection budget is used to purchase quality electronic resources—indexes and databases, periodicals, and even electronic books—that are delivered over the Web. These are resources that they will never find by using a popular search engine such as Google, because the proprietary materials purchased from companies can only be accessed by the WMU community and do not appear on the "public" Web. Students are understandably confused by the distinction between materials found on the free public Web and those on the "private" Web, since the Web is used as a delivery method for both. While the public Web is easy to use, its search engines retrieve a large number of irrelevant pages. In contrast, electronic indexes provided by the University Libraries give students access to better information including scholarly articles that have undergone a review process by trained professionals. However, to use these electronic indexes effectively, students need to learn the underlying strategies for searching indexed databases. They can then apply the strategies when they search different databases since each database may have a slightly different interface or search approach. In sum, our task in the University Libraries is to help students throughout the whole research process so that they know how to find information and how to filter and evaluate it to identify the best sources for their research.

Teaching students how to use library resources is a big job, and the University's rapidly growing enrollment makes the task increasingly difficult. Last fall there were 28,931 students enrolled at WMU, 23,156 of them as undergraduates. Our ultimate goal is to reach as many of these students as possible with our library instruction program, but we currently focus on freshmen and students in classes with a substantial writing or basic research component. Library presentations are tailored to instructors' assignments and to the class needs. Our classes are usually held in one of our two computer classrooms and are limited to a single hour with time built in for hands-on experience. However, with only ten reference librarians in the University Libraries providing the bulk of instruction, and given the need to offer instruction early in the term when it is most effective, it is impossible to meet with all students, even for one session, during the periods when classes are scheduled. As a result, even the scheduling logistics are difficult. For the past year, Searchpath has provided a solution to the problem of too many students, too many class needs, and too few library instructional specialists.

Creating Searchpath

Searchpath is the most technologically advanced of several tutorials developed by the Libraries' reference librarians in the last decade. In 1993, Pat VanderMeer produced our first HyperCard tutorial for a one-credit University orientation class. This was replaced in 1998 by Labyrinth, a Web-based tutorial developed by Judith Arnold and myself, which was followed by the first discipline-oriented tutorial, in Criminal Justice, authored by Pat VanderMeer. As the Libraries' Web presence grew, library liaisons prepared subject guides that provided a form of online education in different subject areas, and a number of "how to" guides were added to our Web pages. However, it was also evident that a much more student-oriented tutorial, making use of new technological enhancements, should attempt to begin the process of teaching information literacy.

In 2001, I applied for and received a one-year Teaching with Technology (TLT) grant from Western Michigan University to develop an online tutorial for students. The grant provided funding for some released time, assistance with HTML coding, and software. We began the project by defining our audience and the student proficiencies and skills we wanted them to acquire. We researched other library tutorials to identify the best ideas and examples on the Web. A tutorial developed for the University of Texas and its branches called the Texas Information Literacy Tutorial (TILT, not to be confused with TILT) heavily influenced our work. In March 2001, TILT, nationally rec...
Searchpath ...

Continued from page 3

ognized as probably the most innovative library tutorial, released its files under Open Publication License (OPL). By agreeing to credit its authors under the terms of the OPL, we had permission to use any of their images, HTML, and Flash files. While we originally thought we would simply adapt the TILT tutorial, our project became more ambitious. As we reorganized, rewrote, and wrote new content, and resized and replaced many of its images with our own, Searchpath took on a life of its own with a particular relationship to WMU.

As project manager and author, I was responsible for the content for Searchpath and created the graphics, but there are many people who had a hand in creating Searchpath. Maira Bundza is responsible for the HTML coding, for setting up the directory structure, and for technical problem solving of all kinds. She also supervised our student workers, Swati Narra and Sreetharan Kupusam, who did Java script and cookies coding, and David Kohrman who also did coding, as well as photography and image work. WMU's Media Production office created two short Flash movies for the tutorial and the design for its opening page. Both students and faculty in Waldo Library's Central Reference department helped critique and test Searchpath as it was being developed, and the Libraries' administration was always in the wings with its strong support.

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EDITOR AND DESIGNER:
Laurel A. Grotzinger  
Professor, Central Reference  
[laurel.grotzinger@wmich.edu]

PHOTOS:
Galen Rike, Associate Professor, Central Reference

The Searchpath Mission

Searchpath covers the research process from initial topic selection to citation styles and the issue of plagiarism. Searchpath is self-paced, and because it is on the Web, it can be accessed and used at any time by any student with an Internet connection whether in one of the libraries, at a computer lab, in student housing on-campus, or from a home computer. It was especially designed for freshmen in introductory-level classes such as English 105, BUS 142, and Engineering 102, but it is available to all students, including transfer students, distance learners, international students, and graduate students. To provide interactivity and to engage students in learning, Searchpath employs Flash movies, "live" database searching, a game to reinforce learning, and quizzes that furnish immediate feedback to students' answers.

The content is organized into six modules: (1) starting smart, an introductory overview that introduces students to various types of sources; (2) choosing a topic, which provides tips on broadening and narrowing a topic and discusses search concepts such as Boolean logic; (3) using WestCat, which has live practice searches in our online catalog; (4) finding articles, in which students can practice searching the Periodical Abstracts online database; (5) using the Web, which includes the comparative evaluation of Web sources; and (6) citing sources, a module that also includes the topics of plagiarism and copyright. Students can complete each of the six sections in about 15 minutes, either one module at a time or all in one sitting. Each module is followed by a short quiz, and the quiz results can be printed with the student’s name and submitted to the instructor as proof of completion.

Use and Testing

Instructors who used Searchpath in last fall's pilot phase assigned extra credit points to students who completed Searchpath, and in the Winter semester, 2002, we began asking these instructors to assign Searchpath before bringing their students to the library for instruction sessions. Faculty members were pleased with the extra help that their students received and found Searchpath easy to incorporate into class requirements and grading. Instructional librarians, in turn, found that students who had completed Searchpath now had a context in which to place new information and were better able to assimilate the information presented in library sessions. In these sessions we can now review the basics they learned and spend more time on critical thinking and evaluation skills. This coming Fall semester we will be asking all instructors to assign Searchpath prior to bringing their classes to the library.

What's Next?

In June we followed TILT's example and released Searchpath files under Open Publication License. Our hope is that other academic librarians can adapt and use our work for the benefit of their students. As of August, five colleges have asked to use our files to adapt Searchpath for their institutions: Stanford University, Aquinas College, Lewis & Clark College, Alverno College, and the University of Central Oklahoma. The University of Michigan's Undergraduate Library, Lansing Community College, and Grand Valley State University have expressed their intention of downloading our files, and Johns Hopkins University has received permission to use our navigation system.

Recently, we added a survey to Searchpath to learn more about users' attitudes about the tutorial. In addition, we hope to begin some formal usability tests this fall. We will continue to update and refine Searchpath based upon the feedback we receive. Searchpath is at http://www.wmich.edu/library/searchpath. We invite you to take a look and to send us your comments on Searchpath by using the "input" link at the bottom of the page in each module.

Perhaps the best rewards for our work are the comments from our colleagues in the field. Two stand out—one from our own institution and one from the University of North Carolina, Chapel Hill.

...Everyone in the Faculty Senate office was examining your website yesterday. It is absolutely gorgeous! We enjoyed it immensely, and you have done a great job."

Dr. Dean Johnson, Chair TL T Grant Review Committee, Western Michigan University

"Searchpath is excellent! One of the best [tutorials] I've seen."

Dr. Evelyn Daniel, Professor and former Dean, School of Information & Library Science, University of North Carolina, Chapel Hill.

"Learning without thought is useless; thought without learning is dangerous."

—Confucius, Analects