Design and Development of Web-based Information Literacy Tutorials

by Shiao-Feng Su and Jane Kuo

The current study conducts a thorough content analysis of recently built or up-to-date high-quality web-based information literacy tutorials contributed by academic libraries in a peer-reviewed database, PRIMO. This research analyzes the topics/skills PRIMO tutorials consider essential and the teaching strategies they consider effective. The authors advocate a design and development towards supplanting class instruction.

Shiao-Feng Su, Associate Professor,
Graduate Institute of Library and Information Science,
National Chung-Hsin University, Taiwan, Republic of China
<sfsu@dragon.nchu.edu.tw>;
Jane Kuo,
Circulation Librarian, Luking Library, Providence University,
Taiwan, Republic of China
<janekuo@lib.pu.edu.tw>.

Introduction

The ACRL defines information literacy as "a set of abilities requiring individuals to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information."[1] This skills cluster is not only a key outcome for college students, but also contributes to lifelong learning. Face-to-face classroom instruction is generally acknowledged as an effective setting for teaching such skills. Yet students may encounter many obstacles in taking a formal or short course. For instance, the library may not offer enough sessions to accommodate a large quantity of students due to insufficient staff or students might have a busy or conflicting study schedule. Seeking alternatives to convey information literacy instruction is imperative.

Recent literature reveals that students are agreeable to web-based instruction. Tapscott coined the term "net generation" for the current student population, whose defining *characteristics* include being comfortable with technology and confident of web navigation skills.[2] Delivering information literacy instruction through a web-based venue not only offers an alternative to meeting the hectic lifestyle of college students, but also brings unique advantages in promoting information literacy to net generation students. First, it allows students to engage the information on their own terms. Students may control their learning and become an effective and independent learner. Many librarians acknowledge that students are more likely to use information skills acquired at point of need.[3] Secondly, as many web-based tutorials offer indexes or a table of contents with links to jump around specific topics, students can land precisely at desirable sessions. Thirdly, web-based instruction facilitates repetitive learning. Students can go through the tutorials as many times as they need to without feeling embarrassed at not being able to comprehend certain points during the first run. Students may not want to bother others and thus hesitate to ask the instructor to repeat instruction in a traditional face-to-face class. The first two features maximize the possibility of learning at point of need. The last one is what traditional face-to-face classroom settings cannot easily match. Web-based tutorials are in line with the distance learning trend and the needs of remote students.

Quality instruction is concerned with contents and teaching strategies. Web-based information literacy instruction, with its distinct venues, channels, and facilitators, may reflect some differences from the class setting in content presentation and teaching strategies. Examining up-to-date and peer-reviewed tutorials shows the design and development of quality ones, particularly, what topics are widely developed and what strategies are extensively applied. The review result serves as a reference for librarians planning to build their own tutorials and also illustrates the emphases and understatements on topics. This study calls for action and makes enhancement suggestions for librarians' reference. Finally, the current paper briefly discusses whether web-based instruction meets the information literacy goal set by ACRL.

Research Background and Methodology

This paper first explores recently built or updated high quality web-based information literacy tutorials in a peer-reviewed database, PRIMO. The ACRL-PRIMO Committee reviewed and selected the tutorials. The authors endeavored to find out what tutorial topics are being developed and what types of teaching strategies are being employed from the best samples of the best tutorial database. Through surveying their popularity in these tutorials, the findings help speculate what topics are widely considered essential and what teaching strategies appropriate in the web-based setting.

This study also examines tutorial presentation: length of time, use of media, and visibility on university websites. Given rapidly evolving multimedia technology, such as broader bandwidth and faster speed, this paper also examines to what extend tutorials have taken advantage of animation, voice, screen recordings, and filming to enliven the content or to reduce weariness. A tutorial hidden in deep layers of a website would presumably be harder for people to find or bump into, which may result in decreasing visibility and visit counts. The current study examines each selected tutorial to identify how many clicks it typically takes to get from the library home page to actual tutorial browsing. These findings and those on widely acknowledged contents and pedagogy from the best of the best tutorials could serve as a reference for librarians to design, develop and enhance their own web-based information literacy tutorials.

As of February 14, 2008, PRIMO (Peer-Reviewed Instructional Materials Online Database, formerly Internet Education Project) is composed of 154 distinct peer-reviewed web-based information literacy tutorials created by librarians.[4] The ACRL instruction section committee reviews submissions twice a year for inclusion from libraries worldwide. The accepted and high quality resources are then publicized to "help librarians to respond to the educational challenges posed by still emerging digital technologies."[5]

Since this study aims at examining primo tutorials for academic users, it excludes those with invalid web addresses, not open to the general public, not for or from academic libraries, without update information, or updating prior to February 2005. Tutorials that only provide copyright periods are excluded, which are too vague to reflect the last update. Table 1 shows the stepwise selection criteria and the number of tutorials that fell into these filtering categories.

Thirty-seven tutorials passed the above-mentioned vigilant scrutiny and entered the analysis phase, including six tutorials that moved to new addresses without updating in PRIMO. The selected tutorials in the study have been either built or updated within the last 3 years (2005–2008). The build date is an important entry to understanding the history of web-based materials. Librarians often preach about including the build and update dates for evaluating website creditability, but ironically ignore their own advice regarding their own design products. Of the seven tutorials that reported creation date, two were created in 2007, two in 2005, one in 1999, one in 1997, and one in 1995. This shows that at least three tutorials in PRIMO have continued updating for the past 10 years since their creation. Appendix 1 lists the titles, contributors, and web addresses of selected tutorials, with artificially assigned serial numbers.

Table 1
Stepwise Exclusion of Tutorials Unsuited to the Study

Selection Steps	Number of Tutorials	Cumulative Number of Tutorials
Invalid web address	36	36
No update information	64	100
Not Updated after 1/1/2005	7	107
Not for or from academic libraries	6	113
ID and password required	4	117

The majority of selected tutorials have been updated within the last 2 years (97%). Most of them updated in 2007 (22, 59%), ten in 2006 (27%) and four in 2008 (11%). Only one of the selected tutorials last updated in 2005 (3%). It is highly probable that some de-selected tutorials were actually under constant update but did not indicate such. Such a simple indicator disqualified sixty-six tutorials from being included in the analysis. Tutorials neglecting to include a build date or update information become the biggest obstacle to including more tutorials in the study.

The majority of selected tutorials originated from academic libraries in the USA. While most libraries submitted only one tutorial to be included in PRIMO, there were no rules against contributing more by an individual library. Colorado State University Library, for instance, typified such a circumstance with its contribution of seven tutorials. In sum, twenty five academic libraries in the USA contributed thirty-one tutorials. Three libraries in Australia contributed four tutorials. One Canadian library contributed one tutorial, as did one library in Hong Kong.

Literature Review

As distance learning flourishes and library resources shrink, web-based instruction provides a viable and effective solution to satisfy college student's diverse need for information literacy skills. Ten years ago, Dewald first investigated online tutorials to analyze if they incorporated the seven best practices of traditional classroom-based library instruction: course-related or assignment-related, active learning through exercises, collaborative learning, offering information in more than one medium, clarifying objectives first, teaching concepts, and including the option of asking the librarian for help.[6,7] She further examined whether the seven criteria are applicable to web-based instruction, in particular, the twenty web-based library tutorials selected by the Research Committee of the Library Instruction Round Table (LIRT) of the American Library Association in 1999. Dewald pointed out that information literacy instruction on the web diverged from that of classroom instruction in at least five perspectives: purpose, setting, audience, interaction, and outcomes.

"As distance learning flourishes and library resources shrink, web-based instruction provides a viable and effective solution to satisfy college student's diverse need for information literacy skills."

Information technology advances and student demographics have changed the past several years. Dewald's core concepts remain valid. However, the content, pedagogy, and presentation of up-to-date tutorials have varied considerably, as well as student's experience and preferences in self-directed learning. Web-based instruction is no longer confined between the student and the computer. Students can easily interact with other learners and/or seek assistance from the librarian through instant messenger or chat reference, greatly facilitating collaborative learning and interaction with a librarian, two of the seven good practices promoted by Dewald. Web-based instruction is no longer created exclusively for distant education; it can complement classroom instruction and does not need to be limited to only a support role. If properly designed, students may prefer learning using the web-based approach and learn equally well. A formal study surveying the current state of web-based information literacy tutorials has not been conducted to date.