Abstract
A web-based science information literacy tutorial is described that introduces undergraduate science majors to basic components of scientific literacy. The tutorial introduces concepts, vocabulary and resources necessary for understanding and accessing information. The tutorial content is based on the Association of College and Research Libraries (ACRL) Information Literacy Competency Standards for Higher Education1 and the Information Literacy Standards for Science and Engineering/Technology.2 In order to engage students in a Web 2.0 world, the tutorial has evolved to incorporate interactivity, graphics, and self-assessment. This paper provides information on the development of the tutorial, examples from the tutorial, suggestions for future designers, and the next steps in development of the tutorial.

Introduction
• Familiarity with the scientific literatures and the ability to evaluate diverse sources of scientific information are important goals of science education.
• Many students arrive at college with no experience in primary scientific literature and the use of standard scientific search techniques.
• The tutorial was designed for undergraduate science and engineering students to bridge the science information literacy gap between high school and university and provide a foundation for life-long learning skills.
• The UCI Science Information Literacy Committee developed a beta version of the tutorial.
• Tracking tool and user surveys have been added to the tutorial to assess its efficacy.
• The tutorial is in test mode...it will be rolled out by the beginning of July 2008.

Tutoring Content
• Three modules:
  1. Creating, Sharing and Finding Scientific Information (scientific method, scholarly communication, etc.)
  2. Science and Engineering Sources and Resources (information needs, format types, information sources, subject resources, etc.)
  3. Reading, Evaluating and Citing Information (choosing between sources, identifying bias, plagiarism, etc.)
• Links to other library tutorials and resources (i.e. Library catalog, subject guides, databases, Ask A Librarian)
• Self-assessment tools including pre-tests, interactive exercises, and a self-review with opportunities for review and practice
• Content and formatting were revised through three phases of usability-testing

Discussion
In this Web 2.0 world, creative methods are required to engage students and other patrons to learn library skills.

Usability testing provided valuable insight into the need to remove jargon, simplify text, define words, change wording, etc. Multiple users suggested changes for section headings. For example: the "test" at the end of a module was relabeled as a "self review" so that students would approach it without the negative connotations of a graded exercise.

Continuous feedback is being collected from end users on the current tutorial. Users are motivated to provide comments by automatic entry into a drawing for a bookstore gift certificate.

The library literacy has paid considerable attention to web tutorials as an efficient means of delivering instruction in the use of online databases and other resources. Librarians have used database producers and other vendors in development and use of online tutorials. To catch up, the tutorial was designed for undergraduate science and engineering students to bridge the science information literacy gap between high school and university and provide a foundation for life-long learning skills.

Next Steps
• Market the tutorial as an assignment or extra credit in undergraduate science courses (students can email or print a completion form at the end of each module.)
• Analyze user feedback, assess usefulness for students and tutorial revision
• Create specific discipline tutorials using Canvass
• Add YouTube mini-tutorials

Fig. 1. “Information Formats” screens from beta tutorial.
Fig. 2. “Information Formats” screen from current tutorial.
Fig. 3. Module 1 “Pre-Test” with answer feedback.
Fig. 4. Module 1 interactive exercise.
Fig. 5. Module 2 review.
Fig. 6. Introductory screen for Module 3.

References

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