An Undergraduate Science Information Literacy Tutorial in a Web 2.0 World

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Abstract

A web-based science information literacy tutorial is described that introduces undergraduate science majors to basic components of scientific literature. 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 Education[1] 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 poster 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 literature 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 introductory science courses often spend little or no time on information literacy.
- 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. The content and format of the tutorial were revised to be interactive and graphics-rich.
- Tracking use and user surveys have been added to the tutorial to assess its efficacy.
- The tutorial is in test mode…it will be rolled out the beginning of July 2008.

Tutorial 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.

Continued 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 literature has paid considerable attention to web tutorials as an efficient means of delivering instruction in the use of online databases and other resources. Libraries lag behind database producers and other vendors in development and use of online tutorials. To catch up, librarians must overcome resource constraints and master the technology and software needed to produce tutorials.[4]

Efficacy is maximized by collaboration between science and engineering faculty and the library (subject librarians, instruction librarians, web librarians and technology staff).[5]

Tutorial Screenshots

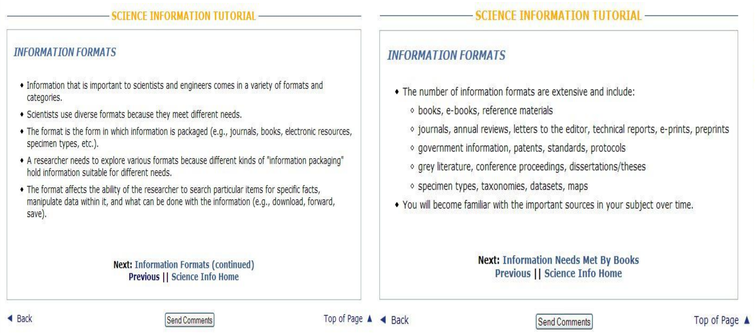

Fig. 1. "Information Formats" screens from beta tutorial.

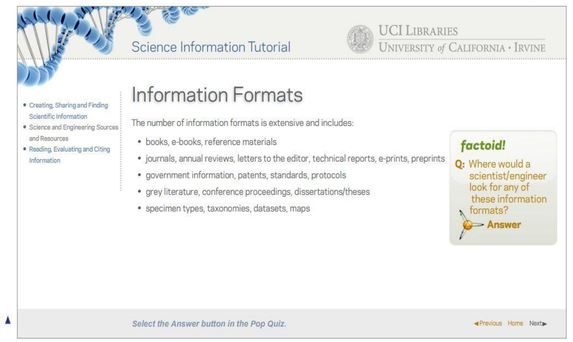

Fig. 2. "Information Formats" screen from current tutorial.

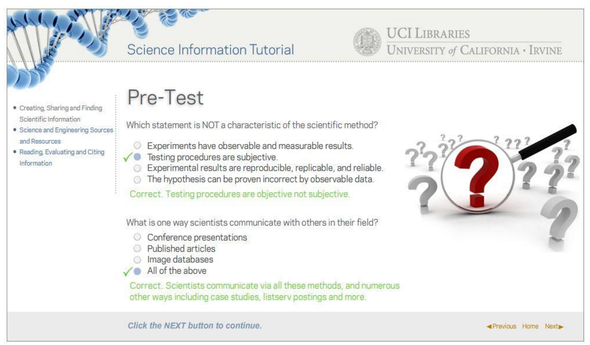

Fig. 3. Module 1 "Pre-Test" with answer feedback.

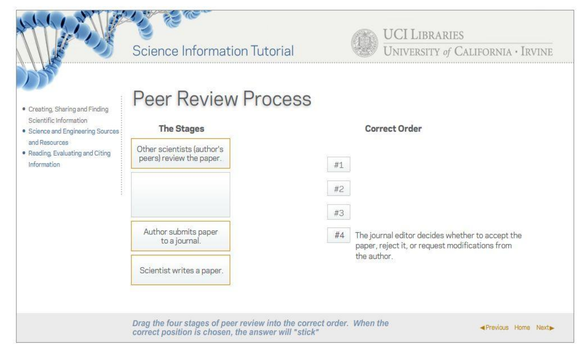

Fig. 4. Module 1 interactive exercise.

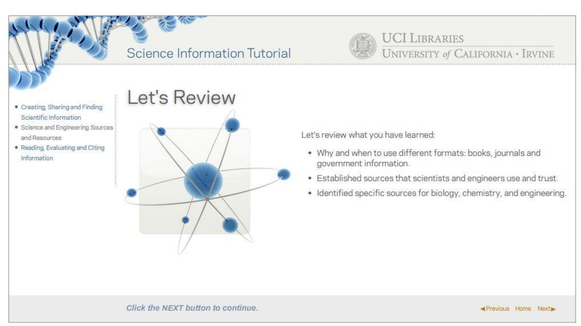

Fig. 5. Module 2 review.

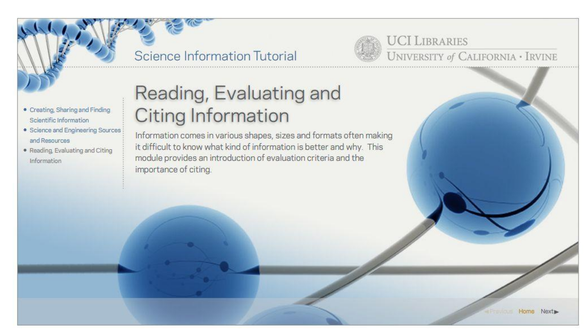

Fig. 6. Introductory screen for Module 3.

Next Steps

- Market use of 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 revise tutorial
- Create specific database tutorials using Camtasia
- Add YouTube mini-tutorials

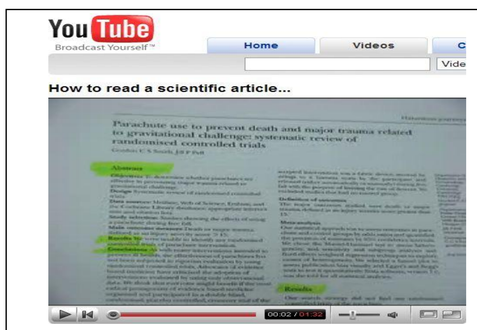

Fig. 7. YouTube video, "How to read a scientific article…"

Advice

- Engage students with interactive exercises, self-assessment, videos, external links, etc.
- Usability test the tutorial multiple times at various stages of completion
- Give incentives to end users for providing continuing feedback
- The "final" product should not be static…plan for ongoing revisions

References

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4. Jackson, KM and Maddox, EM (2004) **Evolution of a Chemical Literature Web Tutorial at Texas A&M**. Special Libraries Association (SLA) Chemistry Division Web Conference, Teaching Users via the Web: Web-Based Training and Instruction in the Sciences. (http://units.sla.org/division/dche/2004/maddox.pdf)
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