

TILTING TOWARD MILLENNIALS: UPDATING ONLINE INFORMATION LITERACY INSTRUCTION FOR POST-MODERN LEARNERS

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In 2009, the Wayne State University (WSU) Library System Instruction Team began the process of updating its online information literacy tutorial, Searchpath. The tutorial had been based on the Texas Information Literacy Tutorial (TILT) which was removed from the online environment in August of 2009 by the University of Texas. The goal of the instruction team was to create a tutorial that embraced instructional methods that catered to millennial students. Thus they planned to design a more visually appealing web interface, create videos, add elements of interactivity, and focus on specific skills necessary for students new to library research. The new tutorial was launched over the 2010 Spring/Summer semester and was appropriately named *re:Search*. This paper discusses the process undertaken to update and develop content for *re:Search*.

TILTING THE CONTENT

INITIAL EVALUATION

The WSU Instruction Team implemented Searchpath in the early 2000s. The tutorial reflected web design techniques and library instruction practices of that time, and therefore needed not only updated content, but an updated interface.

Informal User Studies

In order to gain insight into what students wanted from an online tutorial as far as content and design, an informal user study was undertaken. A list of web-based library instruction

tutorials, including Searchpath, was compiled. Students were asked to provide opinions about the strengths and weaknesses of each site on the list, paying specific attention to how content was presented, if content was presented effectively, and how the overall experience of the site affected them.

Students reported that they enjoyed sites that had very short videos, small amounts of text, and were easy to navigate (meaning, they could jump around to different pages in the tutorial.) The feedback about Searchpath was less than positive. Students indicated that they felt the website looked dated, the content was presented in a boring or “cheesy” manner, and there was just “too much content” in general.

DESIGNING WEB-BASED INSTRUCTION

After reviewing the opinions from the informal user study the approach to the redesign centered around five guiding components.

Content

The original tutorial provided users with six modules, but the content was redundant at times and did not necessarily provide students with the basics of library instruction they needed. The updated tutorial still contains six modules, but the content in each tutorial has been changed to provide better “flow” for students. The six modules are as follows: An Introduction to the Library, Keywords, Finding Books, Finding Articles, Evaluating Websites, and Plagiarism. Objectives are listed at the beginning of each module and the content was designed to meet only those objectives.

The old tutorial used multiple pages of screenshots to teach a series of steps. These instructional sequences were all converted into short video tutorials. Also, in the old tutorial

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the first module provided students with an introduction to the research process, but there was very little information about actually using the WSU library system. Therefore the new *re:Search* tutorial provides students with a look at the various features of the website, how to use their library account, and other services available to them.

Simplicity

Students in the informal user study objected to the amount of text contained in Searchpath, reporting that they would get lost in the reading and not remember any of the information. The six modules in *re:Search* contain very little text and each module is only five to six pages long. To do this, much of the content was weeded from the original tutorial and only very basic skills and information are covered in *re:Search*. This was done because the purpose of the tutorial was to serve the university's first year students rather than upper classmen or graduate students. For example, there is no discussion of "Boolean operators" in the tutorial--only a mention of using AND to connect keywords. The difference between scholarly and popular articles is presented as a comparison of the visual properties students can use to help them discern which kind of article they have.

Interactivity

The WSU Instruction Team was adamant about wanting some form of interactivity in *re:Search*. And although this component is a work in progress, there are a few examples currently in place. The first example is an interactive video that students can use as a discovery tool to get to know their way around the library website. Certain key elements on the website were selected, and students can click on those items to find out more information and learn how they can use the link in their research. Also, the WSU Library System Developer Librarian, Paul Gallagher, created an interactive flash game that allows students to put together a citation by dragging and dropping the citation elements into place. Students can create a book, article, and website citation in both APA and MLA styles.

Feedback Quizzes

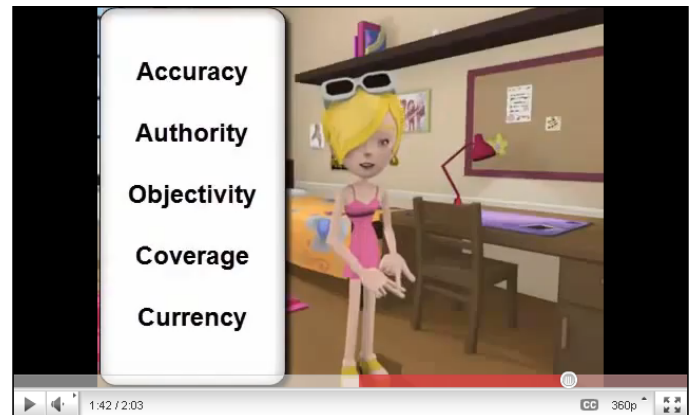
One of the commendable features of Searchpath was that each module ended with a quiz. The Instruction Team thought that this was an invaluable component as it allowed students to self test. This feature also allows faculty to assign the tutorial as a graded assignment. The quizzes, however, did not seem to measure whether or not students had acquired any skills, but rather simply required them to repeat information.

The quizzes in the new tutorial were redesigned to measure specific skills. For example, in order to test a student's ability to locate and open a PDF of an article, a new quiz requires students to search for a specific article and answer a question that deals with content on a specific page of the article. The length of the quizzes was also shortened from about ten questions per module to five.

Appearance

Finally, the "look and feel" of the content was taken into account in the new tutorial. Students did not respond well to the clip art used in Searchpath. For *re:Search*, therefore, videos were created using web 2.0 tools to help teach content such as "scholarly vs. popular articles" and "criteria for evaluating websites." The tools used to create these videos included: Animoto, Prezi, and Xtranormal. One of the more popular videos on the WSU Library Youtube page is the video on Evaluating Websites, created using Xtranormal (Fig 1).

Fig 1: Evaluating Websites video



EVALUATION

All content created for the web must undergo a continual review process to keep it up to date. Of course, any instructional material also must be periodically evaluated to make sure that it is meeting objectives and fulfilling its purpose. The first evaluative study of *re:Search* was conducted in the Summer of 2010, using a survey administered to seventy-six students taking summer courses.

The survey consisted of three parts. The first part was a knowledge test made of the questions provided at the end of each module (these were hidden for testing purposes). The second part was a confidence survey in which students used a Likert scale to indicate how confident *re:Search* made them feel when performing certain tasks, such as locating an article using a database. The final part of the survey was a satisfaction survey. It consisted of several questions about the overall experience and then asked students to rate their least favorite and most favorite elements of the tutorial.

Results from the knowledge test section indicate that students probably need more thorough explanations of the concepts of keywords and plagiarism in order to obtain better scores on questions for these topics. On the satisfaction survey, students indicated that they enjoyed the videos and were generally pleased with the tutorial. Some students suggested changes such as including more interactive components and an easier interface to navigate.

TILTING THE WEBSITE: TECHNICAL DETAILS & DESIGN

INITIAL CONVERSATION

Beyond all the content work described in the previous section, there were many technical and additional design details which had to be correct in order to make sure the new tutorial was successful, thus early in the re-design process, after internal discussions, the Instruction Team reached out to the Web Team to discuss their vision for the evolution of SearchPath. The Instruction Team had already done a lot of conceptual work, and had created video instruction modules, but design decisions needed to be made related to other problems with the user interface and workflow of the site. Over the course of discussion, a few goals emerged:

- **The site had to support video.** Both technically—the site needed to allow for embedded video—and conceptually—the site needed to feature videos in a way that felt integral to the design.
- **The site needed to support self-contained modules.** The original SearchPath modules covered an array of concepts in each module, with no way to access individual concepts on an as-needed basis. Concepts internal to the larger module were inaccessible, unless the user was willing to complete the entire module. The site needed to provide for accessing smaller chunks of content individually, preferably with persistent URLs to facilitate linking from other contexts.
- **The site needed to abandon the linear model.** Akin to the above goal, users needed to be able to advance through the modules in whichever way they chose—start in the middle, skip around—rather than being forced through a linear workflow from beginning to end.

The original SearchPath ended with a quiz, which tested and reinforced the concepts taught in the modules. The quiz provided instant feedback to the user—correct answers were repeated (with an encouraging “That’s right!” or “You got it!”), and incorrect answers were met with a correction and an explanation. This feature needed to be retained in whatever design decisions were made for the site.

The Instruction Team also made it clear that the aesthetics of SearchPath were dated, and that they were looking for an updated design that was less culturally jarring to the new generation of users entering the university.

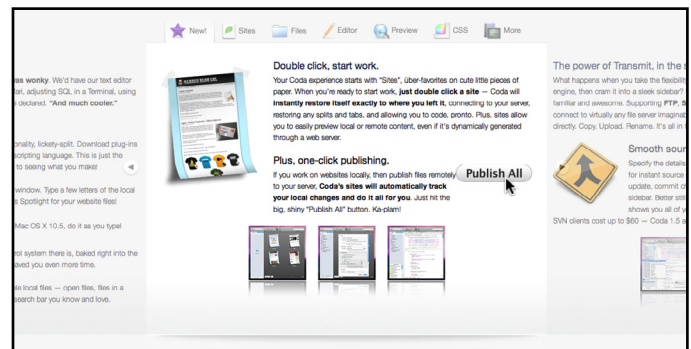
DESIGN DECISIONS

Modular, accessible pages or panels aren’t uncommon on the web now; the inexorable advance of processor speed and memory capacity have made JavaScript-heavy interfaces the norm. One of those interfaces—in evidence at <http://panic.com>, a software development company—provided a

template that seemed to meet the design challenges posed by the Instruction Team.

Panic’s innovation involved creating a content area that slides to the left or right depending on the user’s chosen menu option, hiding and/or revealing new “pages” as indicated (Fig 2). Because this interface is associated with the landing page for Panic’s web editor software, Coda, it has become known in the web design community as a “coda slider.” The Web Team has experience showing / hiding content on the libraries’ web site, using a tab interface powered by jQuery. jQuery is a JavaScript framework that simplifies the task of scripting interfaces, animations and actions in a web page. It supports a plugin architecture, so that functionality can be added by adopting solutions developed elsewhere.

Fig 2: Panic ‘Coda slider’



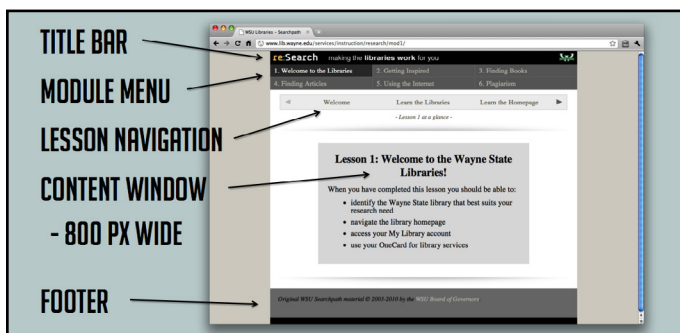
Sure enough, a developer has written a coda slider in jQuery, which provided the platform to adopt Panic’s interface in *re:Search*. While the slider plugin gave us a modular user interface, jQuery’s flexibility allowed us to meet other design challenges as well (responsive quizzes, persistent URLs). Knowing this, the Web Team presented its ideas to the Instruction Team, and was given the go-ahead to proceed.

IMPLEMENTATION

The initial version of *re:Search* (Fig 3) incorporates a header, consistent throughout the site, with a title bar and module menu. The module menu highlights the current module, giving the user a contextual clue to his or her place in the site. Each module has its own horizontal lesson navigation bar, which allows users to progress through the content in the module at their own discretion, skipping ahead or back as necessary. The navigation bar always displays three choices and users can advance by clicking left and right arrows to reveal more panel options. This interface was adopted in the interest of saving vertical space—modules with more panels won’t be forced to display a long vertical menu, pushing the content further down the page. The lesson navigation is duplicated in a dropdown “Lesson at a Glance” menu, formatted vertically and showing all options at once, providing navigation in a different format to accommodate multiple modes of access. This at-a-glance menu is hidden on initial load. Below that, the content area is always visible, displaying the current panel. Choosing another panel from either of the navigational menus will advance the content

window to that panel. The content area can contain just about anything, including video, Flash objects, or even another coda slider object.

Fig 3: Initial *re:Search* design



The previous SearchPath advanced through modules by linking from one HTML page to the next, which served to emphasize the linear nature of the user interface. Because all the content is contained in one page in *re:Search*, the design helps users feel like they're simply choosing from options on a page.

The quizzes that follow each module use jQuery to allow/disallow progression, so that users must answer each question in turn, and see the relevant feedback, before advancing to the next question. Each quiz states explicitly how many total questions are involved, so that users can anticipate the time it will take them to complete the quiz. As the user answers a question, jQuery then reveals either the positive or negative feedback associated with that question, along with the control to advance to the next question.

jQuery collects the answers in a JSON object, which is constructed as each question is answered. Upon completion of the final question, the JSON object is submitted via AJAX to a processing script which returns an HTML grade sheet back to the website. This HTML is then displayed in the final panel, with an option to either print or email to oneself or to another email address. This quiz design is similar to that of SearchPath, though the aesthetics are decidedly more advanced.

FUTURE INDICATIONS

User feedback indicates that the horizontal navigation menu is a stumbling block. The design requires two clicks in many cases—one to advance the menu and one to choose the panel—and users expect to be able to advance using only an arrow, or to see all choices at once. Adjustments are underway to alter this interface to more closely approximate user expectations.

The mechanics of the quiz—how it determines right and wrong answers and where it stores this data—are a holdover from SearchPath, and carry over a pre-existing flaw. A user who is conversant with JavaScript can, by viewing the source code and correctly interpreting the variables, potentially

ascertain the correct answers in advance of taking the quiz. All indications suggest that this is unlikely, but development of a server-side processing script that hides this information is underway.
