FROM LEARNING OBJECTIVES TO MULTI-MEDIA TUTORIALS

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BASIC CRITERIA

The University of Louisville Libraries have been moving towards using short online tutorials to answer a variety of needs. The shorter tutorials make it possible to provide point-of-need instruction while still allowing for flexibility in teaching design and easier updating techniques than longer tutorials. So while many of the ideas discussed in the presentation could apply to in-depth tutorials, my philosophy is to break down the ideas into smaller chunks and create short tutorials which adhere to the following basic criteria:

Brief: Each tutorial is designed to teach a particular concept, not to teach all the exceptions to the concept. Try to keep focused on the main point; too many details or variations will only obscure the point you are trying to make.

Accessible: Tutorials need to be accessible in a number of ways.

1. Online tutorials need to meet all of the same legal requirements as other web sites. The content needs to be accessible to people with different abilities. For example, deaf, blind or arthritic patrons may need different options to see, hear or move around in the program.
2. The file size and type needs to be accessible from a distance. Your students are likely to be using lots of different mechanisms to access your program. Is it accessible on slow modems? Does it require any unusual software? Does it work with both Macs and PCs, with Internet Explorer and Firefox?
3. Finally, it needs to be accessible in terms of language. You may want to write out a script for your tutorial and have someone outside the libraries read through it; he may be able to spot undefined library jargon easier than the writer.

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Self-paced: Allowing the students to control the speed of the tutorial lets them absorb the material at whatever pace works best for them. This might mean loosening up control and permitting them to jump ahead or to move backward.

Interactive: Making the tutorial interactive gives the student a chance to practice the skills she is learning. It also makes the student an active participant in the learning, rather than a passive receiver of knowledge.

Clear: Clarity is probably the most important element. Without it, none of the other factors matter. You need to have a firm grasp on what it is you are trying to teach and then craft your message for your audience.

WORKING THE MAZE BACKWARDS

Have you ever looked at a maze and solved it by working backwards? That's what I like to do when I'm building a new tutorial. Rather than starting with the objectives and learning points, I like to start by looking at the tools I'm going to use and figuring out the basics of the design layout. I'm a very visual person so this gives me a structure to work within. You may find that you want to start from the concepts and build from there, but I find that knowing whether I'm going to use a screen capture software like Wink or a more full-featured program like Flash gives me a set of assumptions about what I'll be able to do.

CONSIDERING SOFTWARE

When choosing software for writing tutorials there are a number of elements to consider both from the librarian's perspective and that of future students. For the librarian, there are issues of cost, staff time, and program complexity. How much time does it take to learn the software? How much effort does it require to create a tutorial?

From the student perspective, you need to also consider technology requirements, accessibility and learning styles.

- Does the program require plugins? Does it work with all browsers? What kind of file size does it generate?

- Can the material be read by a screen-reading program like JAWS? Do you have a written version of any audio sections? Can people with movement disabilities easily navigate and use the tutorial?

- How will the tutorial impact learning for people with different learning styles? Does it use kinetic, visual, oral and/or written techniques?

Take Wink, for example (See Figure 1 below). Wink is a shareware program that can be used to create stand-alone movies or elements that can be imbedded in a larger Flash project. It is inexpensive and fairly simple to use. You can choose to capture the action on the whole screen or set a specific region of the screen to capture. It also provides the option to automatically start recording whenever you use the mouse or press a key. In theory this helps to keep the file size smaller by alerting the system to record only when something is happening. On the down side, an audience member at this session pointed out that even though this feature is meant to keep the file sizes small, Wink still generates very large files. Also, the screen-capture method is insufficient by itself; even with its voice-over capabilities you'll still need to go in and add text. Additionally, the program does not allow for interactivity; the student is a passive observer of the information.

Figure 1
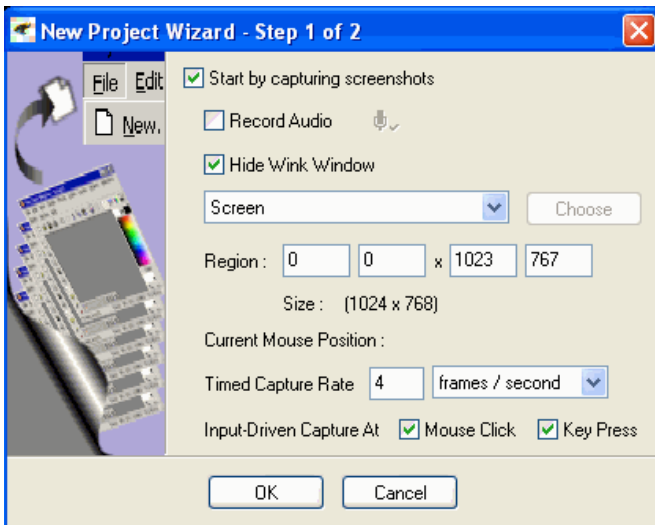
Now consider Flash. (See Figure 2 in right column) If you are planning on doing extensive work creating tutorials (or promotional material for your web site), then Flash is worthwhile to learn because of the functionality it can add; however, the program itself is complicated and not intuitive. The example shown here is set up as a slideshow where you can break up your content into chunks. There is also a timeline for each slide so that you can have events happening at either predetermined times or

at times when the student interacts with the system. For example, when the example above runs, the comment boxes automatically show up – the first is followed three seconds later by the second. More importantly, there are a number of things you can do to build in interactivity including animations, sorting games, and multiple choice questions.

Figure 2
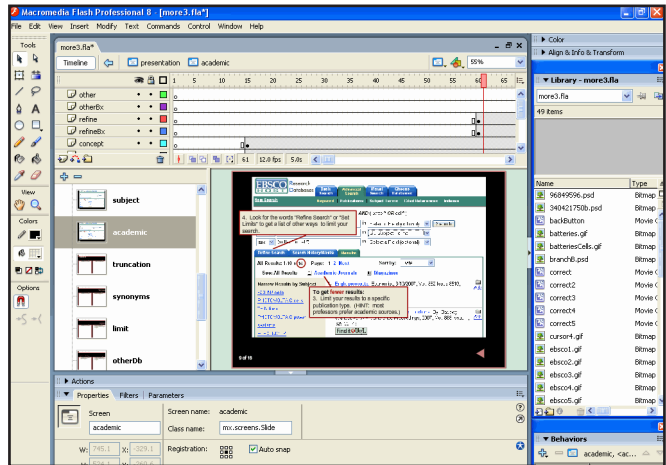
IMAGES

Before we dove into the interactive portion of the session, I promised to talk a little about finding images to use. Two sites that I really like are Uncle Sam's photos [http://www.unclesamsphotos.com] and Flickr [http://www.flickr.com]. Uncle Sam's photos are all taken by government agencies and are free to use as long they are cited. Flickr has a large collection of images posted by people all over the world. Some of them can be used and some cannot. You can use the Advanced Search function to find images that have a Creative Commons license and even limit your results to images that you are allowed to modify, adapt, or build upon. Each image has its own restrictions.

THE STORYBOARD

For the tutorial as a whole and for each screen within it, you need to consider:

Objective: What are you trying to convey?

Content: How are you going to convey that message? Words, screenshots, images?

Layout: How will you use design elements to help clarify the information and aid movement through the tutorial?

Interactivity: How much are you going to require from the student? How much are you going to allow them to control the pacing? How are you going to test the student's learning?

LEARNING OBJECTIVES

A learning objective focuses on the behavior a student should be able to do after completing the tutorial. It needs to include both a description of the task and a way to measure it. Defining your objectives will help you develop your content, instruction strategies and assessment tools. Planning out your storyboard based on these learning objectives will guide your content development by providing a coherent structure for the introduction of the teaching concepts.

At this point in the session, the audience was divided into six large groups to work together on the following exercises.

Exercise 1: Learning Objectives & the Storyboard

1. Define one learning objective for your project.
   a. What do you want the student to be able to do?
      (ex.: The student should be able to identify the title of a journal from an article citation.)
   b. How will you measure competency?
      (ex.: In a multiple choice question, the student should be able to identify which choice is the journal title in a given citation.)

2. Write an outline for the information you want to include in the tutorial:
   a. The purpose of being able to achieve the objective
      (ex. Being able to distinguish the journal title from the article title is vital for locating the article.)
   b. The teaching points
      (ex. Show a sample citation and identify each of its parts.)
   c. The testing mechanism
      (ex. Multiple choice question)
   d. Any interactive elements
      (ex. Mouseover effects that define the citation parts.)
   e. Credits page – list writers, graphic artists, photographers, etc.

3. Break down the content into discreet chunks that can be written/displayed as a single page.
   a. Try using a single sheet of paper (in landscape position) to see how much content you can reasonably put on a single screen.
   b. General presentation guidelines say to limit your text to no more than 30 words to a screen.
   c. When interactive elements come into play, this concept can get a little fuzzy. Just bear in mind how much information is displayed to the student at any given moment.
   d. Think about what images might be appropriate for particular sections. (ex. Screenshots, photographs, drawings)

4. Go back and revise your script.
   a. Eliminate jargon
   b. Reduce verbiage
      i. Do not list out every exception to the concept.
      ii. Make sure wording is succinct and clear.

Exercise 2: Developing a Design Theme

Create a sample design and test it. Once you've created a design that works well, you can use it for multiple tutorials. Consistency is important, though. It makes navigation clear and allows the design to fade away in the students' mental construct while pushing the content to the forefront.

1. List any institutional branding guidelines that affect:
    a. color
    b. font
    c. logo

2. Should the user be able to navigate freely? If yes, how will you make that possible?
    a. Breadcrumb navigation
    b. Sidebar navigation
    c. Link to site index or site map

3. Choose fonts sizes and colors for:
    a. Page title
    b. General text
    c. Emphasized text
    d. Navigation text

4. Choose elements (line colors, background colors, images) to define:
    a. Page borders
    b. Screenshots
    c. Text areas
    d. Navigation areas

CONCLUSION

The groups had about thirty minutes to work together and during that time I wandered around – sometimes helping them with the exercise, sometimes eavesdropping on their conversations. In the end we discussed some of the ideas they came up with and some of the areas that impeded the process. Some of the problems were a product of having different audience members representing different libraries and systems. However, some universal elements came out. Articulating the learning objectives can be hard to do, but just like writer's block the only cure is to start and worry about perfecting it later. Another tricky spot was defining how to incorporate interactive elements and how to use these to reinforce the learning objectives. The more exposure people have to good tutorials and what options are open to them, the more creative they can be in crafting high-quality interaction.

RECOMMENDED TUTORIALS

University of Louisville General Education http://library.louisville.edu/tutorials/

-   Search Strategies: how to get more and fewer results – includes animation and sorting game

-   Finding Articles with EBSCO Academic Premier - includes animation and interactive multiple choice questions

-   Reading the Journal Screen in Minerva, the library catalog – includes, animation, hotspots and typing in fields, and interactive multiple choice

ANTS – Animated Tutorial Sharing Project http://ants.wetpaint.com/

Texas Information Literacy Tutorial http://tilt.lib.utsystem.edu/

Searchpath (based on TILT) http://www.wmich.edu/library/searchpath/module.html

You quote it, you note it! http://library.acadiau.ca/tutorials/plagiarism/

Scholarly vs. Popular Periodicals Tutorial http://www.library.vanderbilt.edu/peabody/tutorials/scholarlyfree/

Peer-Reviewed Instructional Materials Online (PRIMO) Database
http://www.ala.org/CFApps/Primo/public/search.cfm

TOOLS

Wink [http://www.debugmode.com/wink/]
> Allows you to capture screenshots and mouse movements and then annotate them with notes. It's free and easy to use. It can ouput to a variety of formats, including Flash, EXE, PDF, HTML or image files such as BMP, GIF, JPG, etc.

Adobe Captivate [http://www.adobe.com/products/captivate/]
> Captures sound and screen activities and can be used to create randomized quizzes and scenario-based exercises. You can also import Microsoft PowerPoint slides while maintaining animation. Outputs to Adobe Flash Player.

Macromedia Flash
> Not a screen capture tool, but a high-end program that can be used to create interactive tutorials. The learning curve can be steep, but there are numerous tutorials in its online help. I'd recommend picking up a copy of *Macromedia Flash 8 Bible* (ISBN 0-471-74676-2), though, as the program does not come with a manual.

See also:

Camtasia http://www.techsmith.com/camtasia.asp
SnagIt http://www.techsmith.com/screen-capture.asp
SnapZ Pro (for Mac) http://www.ambrosiasw.com/utilities/snapzprox/

For images:

Flickr http://www.flickr.com
Uncle Sam's Photos http://www.unclesamsphotos.com

SELECTED WORKS

Bailin, A. & Pena, A. (2007). Online library tutorials, narratives, and scripts. *Journal of Academic Librarianship, 33,* 106-117.

Byerley, S. (2004). Teaching basic information literacy skills online. *Academic Exchange Quarterly,* 257-261.

Cox, C. (2004). From cameras to Camtasia: streaming media without the stress. *Internet Reference Services Quarterly, 9,* 193-200.

Daugherty, A. L. (2005). Motivating online information literacy students. *Academic Exchange Quarterly, 9,* 286-289.

Ferguson, K. S. & Ferguson, A. (2005). The remote library and point-of-need user education: an Australian academic library perspective. *Journal of Interlibrary Loan, Document Supply & Electronic Reserves, 15,* 43-60.

Hayworth, G. & Brantz, M. (2002). Developing an online library instruction program: ACC's online library tutorial. *Colorado Libraries, 28,* 39-42.

Kearley, J. P. & Phillips, L. (2002). Distilling the information literacy standards: less is more. *Journal of Library Administration, 37,* 411-424.

Kerns, S. C. (2007). Technological tools for library user education: one library's experience. *Medical Reference Services Quarterly, 26,* 105-114.

Kraemer, E. W., Lombardo, S. V., & Lepkowski, F. J. (2007). The librarian, the machine, or a little of both: a comparative study of three information literacy pedagogies at Oakland University. *College & Research Libraries, 68,* 330-342.

Long, H. & Culshaw, J. (2005). How we used demonstration authoring software to create tutorials. *Computers in Libraries, 25,* 6-64.

Roberts, Gary (2003). The yin and yang of integrating TILT with Blackboard. *Computers in Libraries, 23,* 10-56.

Shank, J. D. (2003). The emergence of learning objects: the reference librarian's role. *Research Strategies, 19,* 193-203.

Tempelman-Kluit, N. & Ehrenberg, E. (2003). Library instruction and online tutorials: developing best practices for streaming desktop video capture. *Feliciter, 49,* 89-90.