A Fresh Set of Eyes: Student-Informed Design and Student Usability Studies

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Introduction to Usability
What is Usability Testing?

- “Usability tests identify areas where people struggle with a product and help you make recommendations for improvement. ... The primary purpose of a usability test is to improve a design.”

- "In a typical usability test, real users try to accomplish typical goals, or tasks, with a product under controlled conditions.”

• Needs vs. Wants: not about what you find aesthetically pleasing or desirable, about what is effective

• Design around your users — pick a group representative of the people who would be using it
Before You Start: Informed Consent

- If you plan to publish your results or formally present them, you will need IRB approval & signed consent forms.

- If the results will be used only internally (as were ours), you should still get permission from administrators.

- Make sure your participants understand and are okay with how their data will be used, recorded, and shared (or not shared). [No identifying information should ever be recorded, obviously].
User Centered Design vs Design by Users

• Be open to suggestions/input, but don’t allow it to dictate all your design decisions

• Base design decision on overall user needs, not specific individual requests from your participants

• Activity idea: clustering and labeling with sticky notes. Have users respond to questions by writing on sticky notes, then cluster similar answers and categorize into labels
• How were people using our resources without any instruction / guidance?
• Needs to actionable; it must be something you can modify
• You are testing the tool, not the users.
• Make sure tasks are short and if someone is unable to complete them in an expected period, terminate the session.
What We Tested

- Students were given three tasks to attempt which replicated research activity representative of common class work (see handout).
- Students were instructed to use our resource portal (LibGuides) to conduct their searching.
- Students interactions with their computer were recorded using WeVideo to produce a screencast. Students were also instructed to vocally narrate their thought process as they worked.
Have Users Engage in Authentic Tasks

- Make sure all users are engaged in tasks they would be expected to do in real life. Consider partnering with a teacher to develop a truly authentic task.

- All users should have the same written instructions/tasks.

- Have a script and stick to it; everyone should receive the same verbal instructions.
Tools to Conduct a Usability Test of Online Resources

- Screencasts
- User Feedback
- Moqups (prototyping)
- Printed screen captures & a pen :)
Using Screencasts to test usability of online resources
Think Aloud Protocols and Online User Behavior

- Don’t use leading questions/statements/prompts
- Consider using "cued retrospective reporting" by showing the user a step in his/her process on film and asking what the person was thinking at the time.
- Consider having users practice think alouds with a sample task
• Record users interactions with your site
• Remember to prompt students to think aloud and narrate their thinking/actions

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Tools to Produce Screencasts

- Screencastify
- WeVideo
- Camtasia
- Screenr
- iMovie / Quicktime (can record from iOS devices!)
- Screencast o matic
- Jing
- Phone / camera
Analyzing Your Screencasts

- Said vs unsaid. Be sure to focus on behavior, not just verbal reporting.
- Track scrolling position (page navigation) and cursor movement
- Reconcile statements vs actions
- Compare interactions and behaviors among similar groups of participants (age/grade, etc)
Identify Design Problems/Issues Based on Observed Behavior

- Analyze screencasts to pick out common/repeated problems/areas of confusion
- Look for: patterns of confusion, common stress points, unfulfilled user expectations and failures
Follow Up with Participants with New Design

• Show students how their insights are helping the library and their fellow students.

• Get their feedback on the changes.
Our Study
What We Learned

- Students focus nearly exclusively on keywords they’re given; they usually don’t refine them
- Text is often ignored, especially walls of text
- Desire for pictures/icons to identify/recall resources
- Students prefer 16 point font and high contrast headings
- Differences in student lingo vs our lingo (departments, organization)
- Students generally don’t use menus, tools, or filters
Learning Theory, Library Resources, & Instructional Design
Dual Coding Theory

- Assumes that there are two cognitive subsystems, one that specializes in nonverbal processing and one that specializes in verbal/linguistic processing

- Posits that recall/recognition is enhanced when information is presented verbally & visually

Culatta, Richard. "Dual Coding Theory (Allen Paivio)". InstructionalDesign.org
http://www.instructionaldesign.org/theories/dual-coding.html
Cognitive Load & Learning

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Students lacked the background knowledge and search expertise to utilize our menu-driven organization effectively.

Academic language and categories were not intuitive to students (i.e., History, Social Studies).

Novice researchers expected their keywords to be present in any resource applicable to their task (e.g. when researching “gun control”, they did not recognize that “social issues” resources might contain information on the topic).
Putting Results & Theory into practice
What We Changed

- Added research tips at top of assignment related research guides
- Added descriptor icons & key for databases
- Added identifying icons for each database and reduced descriptive text
Research Tips for Specific Assignments

- Research tips reinforce good information seeking and evaluation skills
- Provide just-in-time support to researchers
Icons help reinforce recognition of resources and identify the key features of databases.

Icons to the left of the database titles identify the database.

Smaller icons to the right of the title identify database strengths and key features.
Helps to limit extraneous cognitive load and lets students focus on the research process.
Contact Us

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