Usability Testing

CS774 Human Computer Interaction
Spring 2004

Icons redux

■ Is this better?

Dialog box redux?

■ Advantages to revising existing interfaces - we get to start by working on the margins, making the little choices

CS774 Spring 2002
Our Design Activities

- Establish process
- Task analysis
- Interface design
- Evaluation

- LUCID process model
- Ethnographic observation
- Scenario development
- Guideline development
- Prototyping
- Heuristic expert evaluation
- Usability testing
- GOMS KLM analysis

So, does it work?

- Ask an expert
  - Advantage: experts know the guidelines
  - They can do: Heuristic evaluation, guidelines review, consistency check, cognitive walkthrough
- Ask a user
  - Advantage: users know the task
  - You can: watch them, interact with them, survey them

General points on testing

- Get to know standards - who would you hire?
  - “We’re going to, you know, test the interface”
  - “We’re going to test the interface using the Nielsen heuristic guideline set and then the QUIS survey”
- Be careful - use informed user consent
- Randomize - make you you break your biases
- Establish your goals
  - Number of errors? Time? Enjoyment? What measure?
Three stages for testing

- Prototype testing
  - Helps you make big decisions, focus in on general design
- Usability testing
  - Done with alpha and beta versions
  - Helps you fine tune most decisions, rethink a few
- Acceptance testing
  - Yes or no decision - is it good enough to release?

Heuristic evaluation

- Neilsen handout
- Establish a list of heuristics to consider
  - Can do your guidelines instead, but more time
- Present interface to experts as you would to users - make the experience realistic
- Experts mark down violations without long discussion, argument or defense
- You collate and prioritize the problems found

Quick and Dirty Heuristic Evaluation Trial

- Go to web site to be determined (TBD)
- Fill out the Q and D Web Site evaluation form
  - Most serious 1, least serious 4
  - Describe page and location of specific problems
- Collect the problems, set action list
User Testing

- Establish scenarios and goals
  - I.e., user should be able to find price of book on our web site quickly; user should be happy afterwards
  - Therefore try to measure time and “happiness”
- Set up test properly
  - User, system, observer
  - Appropriate recording devices (audio, video)
- Conduct test
  - How to best measure your “metrics”? 

Testing formats

- Silent observation
  - Watch the user without talking
  - Good to avoid biasing users, or rationalizations by user
- Think-aloud
  - Watch the user and ask them to explain actions
  - Good to understand mental model, goals, intentions
- Constructive interaction
  - Watch two users work together
  - More normal, comfortable than Think-aloud

Quick and Dirty Think-aloud User Test

- Groups sit together
- Assign roles
  - User - duh.
  - Facilitator - works with users, elicits user thoughts
  - Observer - records user activity, errors/confusions, thoughts
- Do test
- After test, administer user survey
Q and D Survey

- Any screwy questions on survey?
- Surveys are like interfaces
  - Questions must match user language and mental model
  - Only ask respondents questions they can answer
  - Prototype questions before field use
- Prototyping the space survey
- Use validated instruments when possible
  - Do the answers mean anything? Research shows ...

Shneiderman’s implementation rules

- Move from general HCI rules to modern GUI rules
- Chapter 7 - Menus and Dialogs
- Chapter 9 - Keyboards and Mice, Fitts law
- Chapter 11 - Layout and Color, Error messages
- Chapter 13 - Multiple Windows