

## Usability Testing as a User-Centered Design Tool

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## User-Centered Design

- Not just adding steps to an existing process—really rethinking design!
- New priorities in allocating and timing use of resources
- Front-loaded, both in time and money
- *Data-driven* decision-making

## How Do You Do User-Centered Design?

- You start with *user-centered* issues and questions.
- You seek answers in a form that will support making design decisions
- You use methods appropriate to your issues/questions and your point in the development process (early contextual inquiry; usability testing; etc.).

## Most Common Method: Usability Testing

- “Testing” is wrong word—exploratory more often than evaluative
- Like all of UCD, issue-driven
- Scalable—from “discount” approaches to large validation exercises
- Watching the user **DOING** stuff—immersion in the task is critical!

## Eight Major Steps in a Usability Test

- Define the issues you want to investigate: what are your biggest threats to success regarding usability?
- Recast your issues as “testable” questions and again as user tasks
- Define the audience group you want to look at and plan to recruit ~5-7 end-user participants who match the criteria

## Eight Major Steps con't.

- Design the details of the tasks and activities that the end-user participants will perform
- Design your strategy for data collection and decide on keywords (make sure your data *really will* answer your questions!)
- Design and prepare test materials

## Eight Major Steps con't.

- n Conduct the usability test sessions
- n Analyze the data and plan the revision

## Steps 1 and 2: Define issues, recast as testable questions

- n Issue
  - Are our icons intuitive?
- n Closer to testable question (exploratory)
  - When we specify an action in a task, do users choose the right icon? What happens when they try? What problems do they have?

## Steps 1 and 2: Define issues, recast as testable questions

- n Issue
  - Are our icons intuitive?
- n Closer to testable question (evaluative)
  - When we specify an action in a task, do users choose the right icon on the first try at least 80% of the time?

## Exploratory vs. Evaluative?

- n Exploratory=early design "test drive," problem identification (usually qualitative)
- n Evaluative="hit the mark," meet the interim or release criteria (usually quantitative)
- n What do you *need* at this point?
- n Combinations can be very effective

## Think like a user!

- n Issue
  - Should our design include a tool bar?
- n Closer to testable question
  - Ask from user's point of view:
  - What advantage to the user does a tool bar provide?
  - Then you can ask if the user gains that advantage

## Example

- n What advantage to users does a tool bar provide?
  - Identify and locate the specific action choices they want to use (visible palette)
  - Work faster (one-click selection)
- n Then you can ask if the user gains that advantage

### Step 3: Define audience group(s) and recruit

- n Too vague
  - novice
  - guru
  - faculty
- n Better
  - has never used x software, features
  - spends x hrs/wk and uses at least half of these features regularly each week
  - doing research in known area, using new software

### Steps 4 and 5: Define Tasks, Data Collection Strategy

- n Example sequence: a table with two columns
- n Start with issues, testable questions
  - Are our icons intuitive?: "When we specify a task, do users choose the right icon? What happens when they try? What problems do they have?"
- n Add columns for evidence, tasks, type of data, recording form element or other form needed

### Rolling Example

- n Issue
  - Is our "fill" icon intuitive?
- n Testable question
  - When we ask users to fill a shape, do they choose the right icon? What happens when they try? What problems, if any, do they have?

### Rolling Example con't.

- n Testable question
  - When we ask users to fill a shape, do they choose the right icon? What happens when they try? What problems, if any, do they have?
- n Evidence
  - Success or failure on the first try
  - Steps they take
  - Places where they have trouble and why

### Rolling Example con't.

- n Evidence
  - Success or failure on the first try
  - Steps they take
  - Places they have trouble and why
- n Task
  - "You have created a new box. Now make the box polka-dotted."

### Rolling Example con't.

- n Task
  - "You have created a new box. Now make the box polka-dotted."
- n Type of data
  - Performance data (they do it on the first try or they don't)
  - Description (actions they take)
  - Interview or questionnaire (getting at the "why")

## Rolling Example con't.

- n Type of data
  - Performance data (they do it on the first try or they don't)
  - Description (actions they take)
  - Interview or questionnaire (getting at the "why")
- n Recording form element or instrument
  - a form-fill-in that gives you the task name/number and lets you check off success/failure
  - Space for open-format note-taking
  - Interview script with space for open-format note-taking and/or questionnaire instrument

## Caveat!

- n Notice that your whole test design derives from *the way you ask your question*
- n Be sure to ask the question you really need to answer in order to support design decisions

## Step 6: Design and Prepare Test Materials

- n Design user profile questionnaire, task list, props, data collection forms, and any other materials you need
- n Take care!—Edit them, try them out
- n Make the final versions look as professional as you can (face validity)

## Step 7: Run the Study

- n Follow your script; focus on user problems (NOT design solutions)
- n Take notes, collect other data according to plan

## Step 8: Analyze the Data

- n Reserve time for rolling group data analysis
- n As a group, plan the design revision

## Questions and Answers

- n Ask me questions
- n Share your war stories