USABILITY TESTING
Background and Practical Applications

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ABOUT ME

Bio
Web Developer
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Projects
Web Experience Team
Library Website
Digital Collections
Digital Repository
Duke Chapel RECORDINGS


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Tobacco trading cards, albums, and other advertising collectibles from the W. Duke Sons & Co., Liggett & Myers, American Tobacco, and other tobacco companies. More »

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USABILITY
WHAT’S USABILITY?

Learnability
Efficiency
Memorability
Errors
Satisfaction

W. QUESENBERY

Effective
Efficient
Engaging
Error Tolerant
Easy to Learn

SOURCE
USER-CENTERED DESIGN

WHAT USERS SAY
Surveys / Feedback
Interviews
Focus Groups

WHAT USERS DO
Analytics/Log Analysis
Click Heatmaps

HOW USERS EXPERIENCE YOUR PRODUCT
Usability Tests
GURUS

Jakob Nielsen
Nielsen/Norman Group

Steve Krug
Advanced Common Sense

Jared Spool
User Interface Engineering
RECOMMENDED READING

**Don't Make Me Think, Revisited**
Steve Krug
A Common Sense Approach to Web Usability

**Rocket Surgery Made Easy**
Steve Krug
The Do-It-Yourself Guide to Finding and Fixing Usability Problems
UX Dept formed 2013
3 staff + interns
Many research methods
3-4 usability tests per semester
ANATOMY OF A TRADITIONAL USABILITY TEST
Watch actual people try to complete key tasks without help or instruction.

Source: Flickr user Peter Gerdes
A USABILITY LAB for testing

1-WAY MIRROR for observation

WEBCAM capture person’s “thoughts” / reactions

INTERCOM to talk w/observers

A TEST SCRIPT for consistency

A TEST SCRIPT for consistency

UX TEST SOFTWARE capture screen

DISK SPACE for videos

TASKS each on paper

Source: Flickr user Peter Gerdes
TASKS

What should we test?
WHAT TO TEST

Critical things
Tasks users must be able to do successfully in your UI

As scenarios
Express the task as a mini-story -- what’s the motivation?
EXAMPLE TASK

Go to the item menu and find the zoom button.
EXAMPLE TASK: BAD

Go to the item menu and find the zoom button.
EXAMPLE TASK: GOOD

Find a page in an album that has some text on it, and zoom in so you can read it easily.
EXAMPLE TASK: GOOD

Find a page in an album that has some text on it, and zoom in so you can read it easily.
EXAMPLE TASK:

Find the Quick Links section on the homepage and then click the Reserve-a-Room icon.
EXAMPLE TASK: BAD

Find the Quick Links section on the homepage and then click the Reserve-a-Room icon
EXAMPLE TASK: GOOD

You are working on a group project and your team has decided to meet at the library. From the library homepage where would you go to reserve a space?
EXAMPLE TASK: GOOD

You are working on a group project and your team has decided to meet at the library. From the library homepage where would you go to reserve a space?
USERS

Who should we test?
WHO TO TEST

Ideally
Primary target audience for your product

But if not...
Don’t worry too much about a representative sample

Krug: “Recruit loosely and grade on a curve.”
TEST ROLES
The people involved & what they do.
PARTICIPANT
In the driver’s seat

FACILITATOR
The “tour guide”

OBSERVERS
Behind this mirror

Source:
Flickr user Peter Gerdes
FACILITATOR

TOUR GUIDE

Meet & greet
Task giver
Keep ‘em talking
Stay reassuring & neutral

Source: Flickr user Thomas Link
PARTICIPANT

TEST TAKER

Show up (on time)
“Think aloud”
Try to complete tasks

Source: Flickr user Ram Yoga
OBSERVER(S)

NOTE TAKER

Watch closely!
Take brief, informative notes

Source: Flickr user Joe Shoe
TEST PROGRESSION

1. Intro
2. Pre-Test Questions
3. General Reactions
4. TASKS
5. Post-Test Qs / Followup
6. Wrapup
Appendix: Digital Collections usability test script

Thank you for agreeing to take part in this study.

We are trying to understand more fully how students, faculty and staff interact with a website for finding and using library materials that have been digitized. Keep in mind that there are no right or wrong answers and that we’re testing a tool – not you.

Okay, first some general questions:

Are you an undergrad, grad student, faculty member, staff member, or other?

a. If you are an undergrad, what year are you?

b. For undergrads: What is your major? For grads, faculty, staff: What department are you in?

Now I’d like for you to complete five short tasks using the W. Duke & Sons Digital Collection, which includes all kinds of advertising materials and collectibles from tobacco companies (point to https://repository-pre.lib.duke.edu/dc/wdukesons). It would be really helpful if you would share your thoughts and observations as you are completing the tasks, so try to think aloud as much as you can. Like I said, there are no right or wrong answers.

**TASK ONE**

This collection includes trading cards that used to be sold in packs of cigarettes. You’re interested in viewing an album of these cards. From this page, https://repository-pre.lib.duke.edu/dc/wdukesons, find the albums of cards, and select one.

**TASK TWO**

Now, find a page in the album that has some text on it, and zoom in so you can read it easily.

**TASK THREE**
ANALYSIS / REPORTING
User Experience and Market Research

From focus groups to usability studies, Morae helps you gain insight into your user's experiences by providing you with powerful data. Record and remotely observe user interactions, efficiently analyze results, and instantly share your findings with anyone, anywhere.

Get great insights with Morae

Set up, record, observe, and analyze usability studies, focus groups, field research, and product testing. Watch the study or interaction remotely, take notes, and analyze results to instantly share your insights with others.

Software & web user experience testing
Market research & focus groups
Mobile device & hardware testing
Morae

Example Project Study
For use as a learning tool, the Example Project Study configuration was used to create recordings found in Manager’s Example Project.

Recording Details
Modify Recording Details
Video and Audio Sources

Project Pane
Organize studies and recordings.

Details Pane
View details about the selected item.

Search
Search across all or select recordings in a study for data, including web page changes, mouse clicks, keystrokes, markers, and tasks.

Player Window
View the screen and camera video, including the PiP.

Timeline
Navigate through recordings, tasks, markers, and clips.

Analytics Tab Toolbar
Can I search in more than one recording?
LEANER METHODS

It doesn’t have to be so complicated.
"In the beginning, though, usability testing was a very expensive proposition. You had to have a usability lab with an observation room behind a one-way mirror, and at least two video cameras so you could record the users’ reactions and the thing they were using. You had to recruit a lot of people so you could get results that were statistically significant. It was Science. It cost $20,000 to $50,000 a shot. It didn’t happen very often."

Source: Steve Krug
Don’t Make Me Think
YOU ONLY NEED 5 USERS

Some people think that usability is very costly and complex and that user tests should be reserved for the rare web design project with a huge budget and a lavish time schedule. Not true. Elaborate usability tests are a waste of resources. The best results come from testing no more than 5 users and running as many small tests as you can afford.

In earlier research, Tom Landauer and I showed that the number of usability problems found in a usability test with $n$ users is:

$$N(1-(1-L)^n)$$

where $N$ is the total number of usability problems in the design and $L$ is the proportion of usability problems discovered while testing a single user. The typical value of $L$ is 31%, averaged across a large number of projects we studied. Plotting the curve for $L=31\%$ gives the following result:

Source: Jakob Nielsen
http://www.useit.com/alertbox/20000319.html
PROVE vs. IMPROVE

“Do-it-yourself” usability tests are definitely qualitative. The purpose isn’t to prove anything; it’s to get insights that enable you to improve what you’re building."

Source:
Steve Krug
Rocket Surgery Made Easy
GROUP OBSERVATION

Get a roomful of observers.
GROUP OBSERVATION

PROS
Spreads culture of usability
Lots of eyes/minds on the problems
Short report

CONS
High admin. overhead
Lots of staff time
Some tech setup
Fewer participants
GUERRILLA TESTING
On-the fly. Low-tech.
GUERRILLA TESTING

PROS
Simple setup
Low admin. overhead
Lots of participants
Smaller recruiting incentives

CONS
Short tests / few tasks
Demog. targeting harder
No video review / sharable evidence
REPORTING the ISSUES
And making recommendations.
REPORTING

The small, non-honkin’ report

"After the debriefing, it’s a good idea to summarize [the] testing in a short email. By short, I mean it should take no more than two minutes to read—and no more than 30 minutes to write. Think bullet points, not paragraphs."

Source:
Steve Krug
Rocket Surgery Made Easy
Quick Findings Reports

"Formal reports are the most common way of documenting usability studies, but informal reports are faster to produce and are often a better choice."

Source: Jakob Nielsen
http://www.useit.com/alertbox/20050425.html
REMOTE / UN-MODERATED TESTS

Going even leaner.
Get videos of real people using your website or app, in 1 hour

Website | Mobile App
---|---
Website URL

Test this URL on a mobile device!

Get a free, 5-minute video

UserTesting at a glance

See more customers
Take the guesswork out of your designs by testing them with real people.
Quick and simple user testing to help you make data-driven design decisions.

Free!

Get started now · Free forever

The UsabilityHub suite of tests.

**Five Second Test**
Measure the clarity of your design by asking what people recall after viewing it for just five seconds.

**Click Test**
Click tests help you measure how effective your designs are at letting users accomplish an intended task.

**Navflow Test**
Navflow tests let you see how effectively users navigate around your websites and applications.

Find out more
What type of test would you like to run?

- **Five Second Test**
  Shows your design to the tester for just five seconds. After the five seconds is up the tester is asked the questions that you specify, such as "What do you think that page was about?"

- **Click Test**
  Records where users click on your design. The tester is asked to follow the instructions you specify, such as "Where would you click to view your shopping cart?", or "Where would you click to choose a template for your blog?".

- **question Test**
  Simply shows an image and asks the tester to answer your questions. Testers can continue to view the image with no time limit while answering your questions.

- **Preference Test**
  Ask the tester to choose between two design alternatives. You can ask testers to choose based on a particular attribute (e.g. "Which design looks more trustworthy?") or simply ask them which they prefer overall.

- **Nav Flow Test**
  Determine whether testers can successfully navigate through your design. You upload a series of page designs, and specify where the tester has to click to proceed. The success and failure rate of testers is recorded at each step.

Or create one of our recommended tests...
MOBILE TESTING
You only get one shot at launching your mobile app.

User reviews in Google Play and the App Store can be ruthless. From prototype to publish, UserTesting can help your app be the best.

See through the eyes of real users.
Watch users complete the tasks you specify (including gestures), and listen to them speak their minds as they interact with your app. Our panel consists of everyday mobile users, not professional bug testers, so you can see how your target consumers react to your services and where they get stuck.

Get the fastest user feedback.

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Use an app

Magitest

Simple mobile usability testing for sites and apps. Everything is captured and recorded on the device with no additional hardware required.

Magitest - How it works

Front camera to see them

Microphone to hear them

Big tank of tiny little processing monkeys to see what users do.
Paper prototypes

Source: Flickr user themepap
AGILE + USABILITY
AGILE UX = A GOOD MATCH

Stay lean!
Test fewer users (3?)
Test *more* frequently
Short reports
Report quickly

UX work 1 step ahead of development sprint
Test lo-fi prototypes

More Agile tips from: Usability, Nielsen Norman Group, Smashing Magazine
CASE STUDY
Guerrilla testing
Usability test report: Digital Collections

Recommendations to consider

1. Put button to request item for on-site use in the item info section or the right sidebar.
2. Reroll “Start Over” to clarify that it takes the user back to the collection’s main page.
3. Reroll “Back to Search” to clarify that it takes the user back to the search results.
4. Make the Download button visible without the user having to scroll down to see it.
5. Allow users to navigate between different images using keyboard arrow keys.

Background

Emily Day and Emma Boettcher conducted usability testing on the W. Duke & Sons Digital Collection in the Perkins lobby on October 7, 2015 from 1:00 pm to 2:30 pm. A pilot was conducted with a graduate student the previous day. The test consisted of a short set of background questions, five tasks, and two post-test questions. The test lasted approximately 5-7 minutes. See Appendix for usability test script.

Questions we hoped to answer through the test included the following:
- How do users search or browse for items from the collection homepage?
- How do users employ facets while searching or browsing for items?
- How do users navigate within and zoom in on items?
- How do users get back to the homepage using links on the collection page?
- How do users download items from the collection?
- How do users try to request items for use in real life?
- What do users like most about the site?
- What do users dislike most about the site?

Participants

Eight individuals completed the test; the test was piloted in engineering management. Participants included one undergraduate student (50%) and three graduate students (37%). The departments: public policy, computer science, statistics. Two students (25%) were undeclared.

Key findings
Task: You'd like to save this item to your computer to look at later. Show me how you would do that.
Tobacco trading cards, albums, and other advertising collectibles from the W. Duke Sons & Co., Liggett & Myers, American Tobacco, and other tobacco companies.

SOURCE COLLECTION
W. Duke, Sons & Co. records and advertising materials

COPYRIGHT & USE
The materials in this collection are made available for research, teaching and private study. Texts and images from this collection may not be used for any commercial purpose without prior permission from Duke University.
TASK: You’d like to see the actual item you’ve just saved. Where is it physically located? Show me how you would request this item so you can see it in “real life.”
THANK YOU
QUESTIONS?

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