USABILITY

WHY IT MATTERS AND HOW TO TEST IT
TERI WAREING - BACKGROUND

• 20+ Years in Technical Communications
  • Current Position: Sr. Technical Writer with Leica Biosystems (Digital Pathology)

• Usability Background
  • Medtronic Diabetes
    • Close collaboration with Human Factors team
    • User-Centered Design training (Human Factors International)
    • Observer in human factors studies on device / co-facilitator in user documentation studies
  • Certified Usability Analyst (Human Factors International)
  • Leica Biosystems
    • Organizational training in UX
    • Performed VOC research for TechComm team
    • Facilitated usability research w/ Software Development team
    • Designed and facilitated usability studies on user documentation for new device
MY GOALS TONIGHT

Provide an introduction to simple usability testing and its benefits:

1. Convey what “usability” is and why it’s important to the Technical Communications professional.
2. Demonstrate how usability testing uncovers hidden issues and opportunities.
3. Pass on the “usability bug” to anyone who doesn’t have it yet!
SO, WHAT IS USABILITY ANYWAY?

“…usability is about people and how they understand and use things, not about technology.”

– Steve Krug, Don’t Make Me Think
OKAY, BUT WHAT IS USABILITY?

“Three Tips: Simplify, Simplify, Simplify.”
-Jakob Nielsen

‘Usability’ is a combination of factors:

- Intuitive design
- Ease of learning
- Efficiency of use
- Error prevention
- Memorability
BAD VS. GOOD USABILITY

Info overload!

Simple, clear
USABILITY TESTING
THE WHAT, WHY, AND HOW
WHAT EXACTLY IS A USABILITY TEST?

- Evaluates a product or service by testing it with representative users
  - **Facilitator** runs the test
  - **Participant** completes a set of tasks
  - **Observers** watch, listen, and take notes
  - **Subject** – the product/service you’re testing
- We are testing the product, design, or service -- NOT the participant!
WHY DO I NEED TO TEST USABILITY?

• To uncover problems and possibilities:
  • Can participants complete the tasks successfully?
  • How long does it take them to complete the tasks?
  • How satisfied are they with your product?
  • Where are your opportunities for improvement?
THE WORST USABILITY TEST EVER…OR WAS IT?

• Unhappy and difficult participants can yield valuable information!

• The Situation:
  • **Test subject:** Printed User Guide for a next generation insulin pump.
  • **Participants:** Not insulin pump users, but clinically suited to one.
“THIS IS THE WORST MANUAL I’VE EVER SEEN!”

What I learned:

• Empathy - don’t assume.
  • Suspicious we were trying to “sell” her on the pump.
  • Angry at her disease and the limitations it put on her life.
• Don’t take negative feedback personally.
• Keep listening, gently probe for more information.
• Reiterate – we’re not testing (or judging) the participant.
OPPORTUNITY: DESIGN CHANGE

• She couldn’t find information.
• Large printed manual felt overwhelming.
• She suggested color-coded sections.
• We changed design.
WHAT DOES A USABILITY TEST LOOK LIKE?

Usability testing fruit…

• [https://www.youtube.com/watch?v=3Qg80qTfzgU](https://www.youtube.com/watch?v=3Qg80qTfzgU)
### FACILITATOR’S ROLE

<table>
<thead>
<tr>
<th>Do…</th>
<th>Don’t…</th>
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<tbody>
<tr>
<td>Introduce and explain the test session by reading from a script</td>
<td>Wing it with each participant</td>
</tr>
<tr>
<td>Guide the participant through the session</td>
<td>Tell them how to complete the tasks</td>
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<tr>
<td>Allow awkward moments and silence</td>
<td>Allow the participant to get too frustrated</td>
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<tr>
<td>Ask open-ended questions</td>
<td>Give direct answers about functionality</td>
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Brief Description of Quick Ref Guide

- In front of you is an early prototype of a Quick Reference Guide for the New Device. The intention of the guide is to provide basic instructions and reference information for using the device.
- We will now ask you to perform tasks using the guide. The purpose of this exercise is to see how easy the guide is to use, and to get your candid feedback.
- Please remember, we are not testing you, we are testing the design and usefulness of the guide. It helps us better understand your thought process if you can “think out loud” as you are completing each task. (Give example)
- There are two versions of the guide (show them). One flips vertically (turn page up) and the other flips horizontally (typical book style). The content is identical. Please use whichever one you prefer. You’ll have an opportunity to page through the guide after we complete the tasks.

Task 1

- Task 1: Imagine you have a rack of slides that require immediate attention. Find the steps in the guide that tell you what to do.

- Which guide format did user choose?
  ___Horizontal flip   ___Vertical flip

- Able to complete the task without additional instruction? Yes No
  If no, why not?

- How much time did it take (reference is double our time - 52 seconds):

- User rating 1-10 on ease of task to complete:
OBSERVER’S ROLE

- Stay in the background
- Observe and capture:
  - What the participant says
  - Body language
  - Behavior with device / product
  - Where navigation problems exist
- “Shut up and let the users do the talking.”
  - Nielsen/Norman Group
# OBSERVER FORM 1 (SIMPLE)

- Capture observations
- Record pass/fail for task

<table>
<thead>
<tr>
<th>Name of Observer:</th>
<th>Organization, Participant's Name &amp; Date of Visit:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Role: □ Videographer □ Task Timer □ General Observer</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Task #1</th>
<th>Time to complete:</th>
<th># Clicks:</th>
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<tbody>
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</table>

<table>
<thead>
<tr>
<th>Task #2</th>
<th>Time to complete:</th>
<th># Clicks:</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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<table>
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<tr>
<th>What are you observing?</th>
<th>Reported Behavior (What user says they are doing)</th>
<th>Observed Behavior (What you see user doing)</th>
<th>Personal Reaction (How you feel about it)</th>
</tr>
</thead>
<tbody>
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<td>Pass Fail Excel</td>
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Task 1

- Task 1: Imagine you have a rack of slides that require immediate attention. Find the steps in the guide that tell you what to do.

- Which guide format did user choose?  
  ___Horizontal flip  ___Vertical flip

- Able to complete the task without additional instruction?  Yes  No
  - If no, why not?

- How much time did it take (reference is double our time - 52 seconds):

- User rating 1-10 on ease of task to complete:

Summary

- Task 1: Imagine you have a rack of slides that require immediate attention. Find the steps in the guide that tell you what to do.
  - Able to complete the task? Time to completion (52 seconds). Ease of use (1-10, goal is 9-10)

- Task 2: According to the guide, how often should you change the New Device's fan filter?
  - Able to complete? Time to completion (51 seconds). Ease of use (1-10, goal is 9-10)

- Task 3: What does the guide say about changing the parameters for [XYZ]?
  - Able to complete? Time to completion (47 seconds). Ease of use (1-10, goal is 9-10)
PARTICIPANT’S ROLE

- Complete the tasks presented.
- Uncover problems with our design.
- “Think out loud” so we understand expectations, frustrations, delights.
- Reiterate:
  - We’re not testing them! We’re testing the ease of use for the product, service, device, etc.
  - Any candid feedback is valuable.
  - They’re helping us design a better product!
PARTICIPANT PACKAGE

- Set of tasks the participant performs
- Records scores and feedback

Quick Reference Guide Participant Task Form

NAME: ORGANIZATION:

OVERVIEW: Customers have told us they’d like a printed quick reference guide for their device. Before you is a prototype of a printed quick reference guide for the device. The purpose of this exercise is to observe how useful the guide is to you, and gain feedback on how we can improve it going forward.

TASK 1: Imagine you have a rack of slides that require immediate attention. Find the steps in the guide that tell you what to do.
Overall, how difficult or easy was this task to complete?

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<tr>
<th>Very Difficult</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
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</table>

If you rated this task 5 or lower, please provide an explanation of why:

Please fill out this question after completing all the tasks.

Overall, I would rate the usefulness of the Quick Reference Guide:

Awful

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Excellent

If you rated this task 5 or lower, please provide an explanation of why:
USABILITY TESTING
USER DOCS
A MINI CASE STUDY BASED ON A TRUE STORY
“Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be *easy to search*, focused on the *user's task*, list *concrete steps* to be carried out, and *not be too large*."

- Jakob Nielsen
TEST SUBJECT: PRINTED QUICK REF GUIDE

- Background
  - Voice of Customer campaign for user docs revealed needs
    - Printed Quick Reference Guides kept near device
    - Simple step-by-step procedures with pictures
    - Simplify verbiage

- Created prototype quick reference guide for new product for the market

- Performed Usability and VOC sessions along with device
DESIGN DECISION: FLIP UP OR FLIP LEFT?

The Test: Should the book pages flip horizontally or vertically?

• Asked users to use the version they prefer.
• Followed up with questions.
• Results: Flip-left version preferred
NAVIGATION TEST: FINDING A PROCEDURE

• **The Test:**
  - Find a procedure to perform a specific task on the device.
  - Remember: printed book, no electronic search

• **Observations:**
  - Participants quickly scan table of contents
  - Miss words in the table of contents
  - Some go to index
PROTOTYPE 1: USER FEEDBACK AFTER USE

- Keep to one topic per page
- “Tabs” and page numbers in different locations confusing
- Use larger font and pictures
- Less words, more pictures
- Must include troubleshooting
STYLE CHANGES – SIMPLIFY DESIGN & CONTENT

- Removed unnecessary subheadings
- “Tabs” always in same place
- One topic per page
- Increase font & picture size
- Included robust troubleshooting information

Prototype 1

Reworked design
TIPS & TAKEAWAYS

• Tips
  • Use mock-ups and prototypes to test early designs
  • Attend product usability testing
    • Learn about your users and see their pain points
  • Record the sessions (need video release for participants)
  • Get a champion, get started!

• Takeaways
  • Usability is important
  • Testing usability gives us empathy for our users and helps us improve our designs and content
GIVE USERS A SEAT AT YOUR TABLE…

“At most project meetings, everyone has a seat at the table except the poor victims who will have to operate the technology.”

- Jakob Nielsen
# REFERENCES & RESOURCES

## Web Resources
- Nielsen Norman Group (nngroup.com)
- Usability.gov
- The UX Collective (uxdesign.cc)
- Interaction Design Foundation (interaction-design.org)
- Blink UX (blinkux.com)

## In-Person Education and Training
- Human Factors International (humanfactors.com)

## Books
- *Lean UX* by Jeff Gothelf
- *Don’t Make Me Think* by Steve Krug
QUESTIONS?
EXTRAS & INFO
“KING OF USABILITY”

Jakob Nielsen, Ph.D., is a User Advocate and principal of the Nielsen Norman Group which he co-founded with Dr. Donald A. Norman (former VP of research at Apple Computer). Jakob Nielsen holds a Ph.D. in human–computer interaction (HCI) from the Technical University of Denmark in Copenhagen.
UX vs. Usability

Usability
- Effectiveness
- Efficiency
- Learnability
- Error prevention
- Memorability

User Experience
- Satisfaction
- Enjoyment
- Pleasure
- Fun
- Value

Where usability is narrow and focused, UX is broad and holistic.
USABILITY QUOTES

• “Experts are rarely insulted by something that is clear enough for beginners. Everybody appreciates clarity”. (Steve Krug)

• If you don’t talk to your customers, how will you know how to talk to your customers? – Will Evans, Design Thinker in Residence @ NYU Stern

• Usability answers the question, “Can the user accomplish their goal?” – Joyce Lee, Human Factors Design at Apple

• Spend as much time on copy as you do on visuals. – John Zeratsky, Design Partner at Google Ventures

• I get very uncomfortable when someone makes a design decision without customer contact. – Dan Ritzenthaler, Senior Product Designer at HubSpot

• If a picture is worth 1000 words, a prototype is worth 1000 meetings. – Tom & David Kelley, Creative Brothers at IDEO

• When creating content, be empathetic above all else. Try to live the lives of your audience. – Rand Fishkin, Founder at Moz

• “Usability is not only about ease of use but also about bringing something meaningful, having an objective in common with the user.” — Marcus Österberg, Web Strategy for Everyone

• There’s a big difference between imagining using something and actually using it. Shruti Sharma
• Clear content, simple navigation and answers to customer questions have the biggest impact on business value. Advanced technology matters much less. -Jakob Nielsen

• Designers are not users. -Jakob Nielsen

• ...pay attention to what users do, not what they say.

• In the attention economy, anyone trying to connect with an audience must treat the user’s time as the ultimate resource.

• At most project meetings, everyone has a seat at the table except the poor victims who will have to operate the technology

• Three Tips: Simplify, Simplify, Simplify.

• “Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user’s task, list concrete steps to be carried out, and not be too large.”

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