

Honing Your Usability Testing Skills

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Topics

Understanding usability testing

Planning

Conducting

Analyzing

Reporting, including recommending changes

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Understanding usability testing



What is usability testing?

- one person at a time
(sometimes two working together)
- working with a product or part of a product
(often an early draft or prototype)
- (usually) on tasks that you specify
- (usually) thinking out loud
- while one or more people observe
- and take notes on what the person does and says



Every usability test has these characteristics

- real issues (concerns, goals)
- real tasks turned into relevant stories (scenarios)
- relevant participants
- data from what participants do and say



After collecting the data, you

- analyze what participants did and said
- diagnose problems
- recommend changes
- use the results to improve the product –
and the process for developing products like this one



X Not needed

- a complete product
- a laboratory with one-way glass
- software for collecting data
- videotape
- eye-tracking
- formal test report
- that participants come to you



A paper prototype test

Whitney Quesenbery as note-taker

Caroline Jarrett facilitated and took the photo

The participant also gave permission

A note on vocabulary

✗ testing

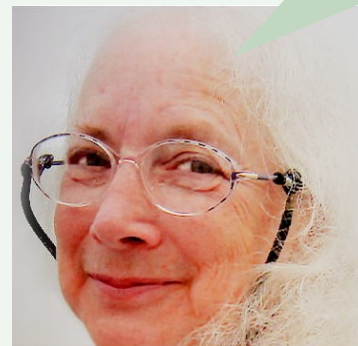
✗ subjects

✗ evaluation

✓ participants

✓ try-out

Please come
help us
by trying out
a web site.



Personal photo
Ginny Redish

We talk about "usability testing" among ourselves.

But if you say that to participants, they think you are testing them.

If you don't use the word "test," you don't have to say "We are not testing you" – which they won't believe even if you say it many times.

Testing for different reasons at different times

Benchmark

- Goal: Establish situation at beginning; derive quantitative usability goals
- When: At start of process
- How often: Usually, once
- Characteristics:
 - larger scale (12 - 18 participants)
 - more formal
 - focus on numbers
 - think aloud not crucial
 - need for help counts as task failure

Diagnostic

- Formative
- Goal: Find and fix problems
- When: During development
- How often: Iteratively
- Characteristics:
 - small scale (6 - 12 participants)
 - less formal
 - focus on qualitative results
 - includes think aloud
 - range of interaction between facilitator and participant, depending on stage and issues

Final

- Summative
- Goal: Show success
- When: At end of process
- How often: Usually, once
- Characteristics:
 - larger scale (12 - 18 participants)
 - more formal
 - focus on numbers
 - think aloud not crucial
 - need for help counts as task failure

Formative? Summative?

Terms from social-science research

Formative =

- While we are working on it
- Goal is to figure out what's working, what's not – to keep what's working and fix what's not

Summative =

- When we are done
- Did it work?
If you set usability goals, did you meet them?

Planning your usability test



What must you plan? *Part 1 of planning*

- Scope What are you testing?
- Issues What do you want to learn?
- Tasks What will participants do?
- Scenarios How will you give the tasks?
- Questions What will you ask?
(in addition to watching them
do the scenarios)
- Data What will you collect?

And more ...

Scope – What are you testing?



Project Partners News Resources Contacts

Welcome to IC Clear

IC Clear is developing an international postgraduate course in clear communication to respond to the increase in demand for clear, easy-to-understand information and the lack of well-trained clear communication professionals.



Project

Partners

Contacts

IC Clear is developing an international

With partners from Austria, Belgium

Do you have any questions about the

Form 1040 Department of the Treasury - Internal Revenue Service (99) **2013** U.S. Individual Income Tax Return OMB No. 1545-0074 (RB Use Only - Do not write or staple in this space)

For the year Jan. 1-Dec. 31, 2013, or other tax year beginning , 2013, ending , 20

Your first name and initial Last name

If a joint return, spouse's first name and initial Last name

Home address (number and street). If you have a P.O. box, see instructions. Apt. no.

City, town or post office, state, and ZIP code. If you have a foreign address, also complete spaces below (see instructions).

Foreign country name Foreign province/state/country Foreign postal code

Filing Status 1 ☐ Single 2 ☐ Married filing jointly (even if only one had income) 3 ☐ Married filing separately. Enter spouse's SSN above and full name here. 4 ☐ Head of household (with qualifying person). (See instructions.) If the qualifying person is a child but not your dependent, enter this child's name here. 5 ☐ Qualifying widow(er) with dependent child

Check only one box.

Exemptions 6a ☐ Yourself. If someone can claim you as a dependent, do not check box 6a. 6b ☐ Spouse

Dependents: (1) First name Last name (2) Dependent's social security number (3) Dependent's relationship to you (4) ☐ If child under age 17 qualifying for child tax credit (see instructions)

If more than four dependents, see instructions and check here ☐

Total number of exemptions claimed

Boxes checked on 6a and 6b: No. of children on 6a who: ☐ lived with you ☐ did not live with you due to divorce or separation (see instructions)

Dependents on 6b not entered above

Add numbers on lines above

Minister, pastor, or other religious leader

How you can keep your workers' comp costs under control and help your injured¹ employee.

1. Stay on top of the claim — online.

➤ **Did you know?** You can have online access to all documents filed in a worker's claim, including medical records, benefits paid, correspondence and much more. Register for L&I's Claim & Account Center: lni.wa.gov — See sign-up box.

2. A claim could raise your rates.

➤ **Did you know?** You can call your account manager² and learn how to preserve your claim-free discount, or take other cost-cutting measures.

3. Check in with your employee and show your concern.

➤ **Did you know?** Injured workers tend to return to work faster when their employer stays in touch. And, employer concern tends to boost work-place morale.

4. Identify any light-duty tasks

your worker might be medically cleared to do while recovering.

➤ **Did you know?** Research³ has shown workers recover faster and have a lower chance of becoming disabled if they can stay active and engaged until fully recovered. This also lowers claim costs.

5. Don't risk losing your rights. Watch for critical deadlines!

➤ **Did you know?** You have a right to protest all claim decisions. But, unless you review all L&I documents, you won't know what's going on — or what your legal deadlines are.

1. Injured, or found to have a work-related medical condition that develops over time and may involve more than one employer (occupational disease).
2. Acct. Mgr.: Shown on cover letter, your online acct. and/or Rate Notice. Or call 360-402-4817.
3. lni.wa.gov — Search: "Outcomes Research"



New! Stay At Work

If you can bring your injured worker back to a light-duty job, it can protect your rates.

And, if you're eligible, L&I's Stay At Work will reimburse you for 50% of the base wage you pay — plus many expenses!

Learn more:
StayAtWork.Lni.wa.gov
1-866-406-2482

FY12-356 [09-2012]

A typical usability test has one scope and many issues.

Issues – What do you want to learn?

- What are you worried about?
- Why are you worried?
- Are you worried about a specific group of users?

Use your
persona-based
critique.



Tasks – What will participants do?

Issue – Can people fill out the form correctly?

Task – Fill out the form.

Issue – Can people find the information they need?

Issue – Will people understand words like "edema," which means "swelling"?

Task – Find information about the side effects of this medicine. Answer correctly whether swelling in the arm is a known side effect.

Scenarios – How will you give the tasks?

This information sheet came with a medicine your doctor told you to take. You've taken it for a few days. You notice that your arm is swelling up.

Could the medicine be making that happen?

See if this information sheet can help you answer that question.

Connect issues → tasks → scenarios

Issue – Can people find the information they need?

Issue – Will people understand words like "edema," which means "swelling"?

Task – Find information about the side effects of this medicine.

Answer correctly whether swelling in the arm is a known side effect.

Scenario –

This information sheet came with a medicine your doctor told you to take. You've taken it for a few days. You notice that your arm is swelling up.

Could the medicine be making that happen?

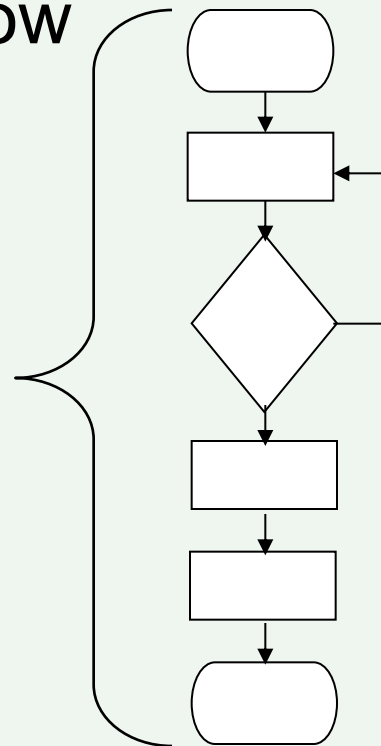
See if this information sheet can help you answer that question.

Write interesting, useful scenarios

- short
- clear, with ordinary words
- just the goal in a relevant story

✓ What
goal
motivation
situation
data

✗ How



We use usability testing
to learn **how**
each participant
tries to satisfy
the situation
in the scenario

Questions – What will you ask?



Before scenarios:

- about themselves
- relevant experiences

After scenarios:

- overall reaction
- what worked well for you?
- what did not work well for you?
- review specific points
- "What would you do now?"

Data – What will you collect?

You must take notes.

P # _____ Date _____ Time _____ Note-taker _____

Scenario 6

You have heard that savings bonds make good gifts. You think you might want to give one to your nephew, Jonathan. Use the website to find out how to give a savings bond as a gift.

Expected
pathway

TreasuryDirect

What participant did and said

Success?

- ☐ Yes, with no problems
- ☐ Yes, with some problems
- ☐ Yes, after a hint or help
- ☐ No

Will you also measure

- time?
(usually not with think aloud)
- success?
(usually yes)

What must you plan? *Part 2 of planning*

- Participants Who will try out your communication?
Where will you find them?
How will you get them to come?
- Logistics How will you do the usability test?
Location? Equipment? Time?
- Roles Who on your team will do what?
- Materials What do you need to get ready?

Participants – Who will try out your communication?



Use your persona descriptions!

Best = people who would really get
and need to use the communication!

Logistics – Where will you test?

Lab? Videotape? Audiotape? – not necessary

Just a quiet place where you and the participant can be comfortable together – and fit a note-taker and observers (if you have them)



Logistics – What if you are far apart?

For usability tests where you work directly with the participant –



– and several other available options

Options also exist for having many people try out your product and scenarios by themselves
– without you working directly with them

Logistics – What will you need?



desktop computer?

laptop computer?



only paper?

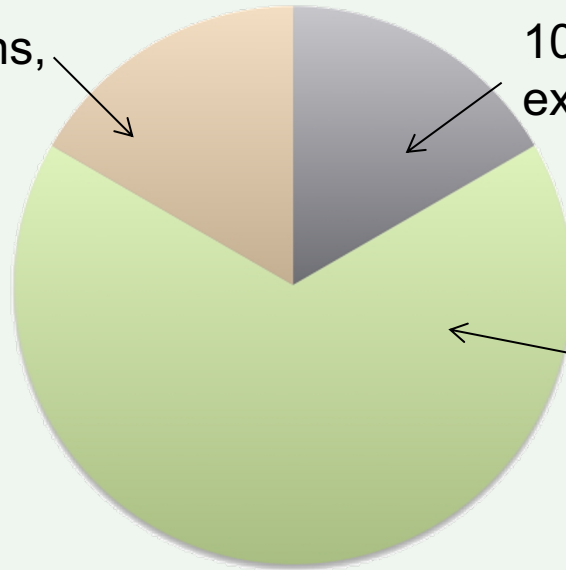


Logistics – How much time?

- Depends, of course
- Typical for web sites – one hour
- For a letter or notice – may need less



10 minutes –
closing questions,
thank you



10 minutes – introductions,
explanations, opening questions

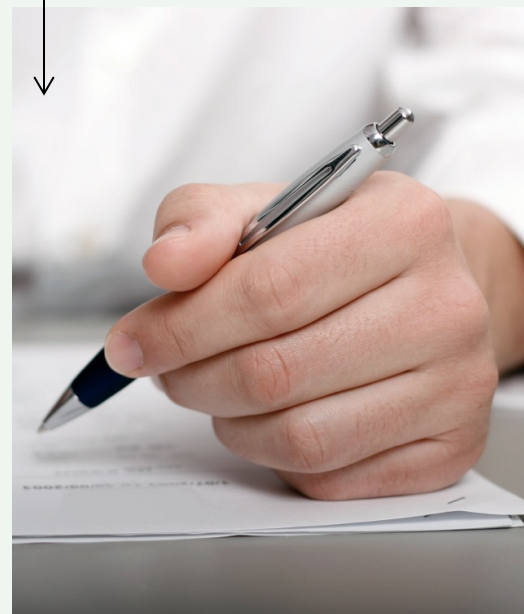
40 minutes –
scenarios with think aloud

Roles – Who on your team will do what?



Facilitator /
Moderator

Note-taker



Materials – What do you need to get ready?

- ✓ Screener to recruit participants
- ✓ Script or notes for facilitator to start the session
- ✓ Release form for participant to sign
- ✓ Note-taking form including initial questions, scenarios, final questions
- ✓ Scenarios for the participant – if you are going to hand them to the participant to read, use cards; one scenario per card; only the actual scenario
- ✓ What you are testing

Conducting your usability test



Conducting =

Facilitating (Moderating)



Taking notes



Facilitating – What do you do?

Starting the session

- Welcome participant
- Make participant comfortable
- Introduce other people who are there
- Explain what will happen



Moving on in the session

- Explain (and perhaps demonstrate) thinking aloud
- Ask initial questions
- Give participant the first scenario
- Watch, listen, take notes
- Continue through scenarios



Ending the session

- Ask final questions
- Thank participant
- Give gift
- Escort participant out



Treat participants with care

- Help them stay calm
- Remember they are there to help you
- They are likely to blame themselves when things go wrong
- Watch their body language
- Watch your body language – stay friendly, but neutral

Help participants think aloud

Tell participants something like this:

Now, I'm going to ask you to look at [whatever you are testing] and work with it. I'm going to give you a few situations you might be in where you would go to this [whatever you are testing].

As you work with [whatever you are testing], please talk out loud. Just tell me whatever comes into your mind – as if you were narrating your experience to someone.

Say what you are looking at, what you are looking for, what you are doing, what you are thinking. I'm interested in all your thoughts and your honest reactions. Was what you found what you expected to find? How is what you are working with working well or not well for you?

All your thoughts are very important to us.

If participants stop talking, try some of the "probes" on the next slide.

Probe when necessary to get more information

When you want to do this	Try this
Explore	"What do you expect to happen if you click on that?"
Get more details	"Tell me more about that."
Clarify something	"If I understand, you're saying that [repeat what you think you heard]." Then wait. The participant will almost certainly elaborate.
Get the participant to keep talking	"uh-huh" "I see." "What are you thinking now?"
Encourage the user to say more (Active listening)	Paraphrase. Repeat back. And wait.

Adapted from
Hackos and Redish, 1998
Figure 10-3, page 285
from earlier work
of Ginny Redish

Listen!

- You are not doing this to demonstrate, sell, or train.
- Have the participant think out loud.
- Use probes and follow-up questions to get more information
 - and to keep the participant talking.
- Know the issues you are focusing on
 - but be alert to the unexpected!
- Don't translate – even in your head.
Hear the participant's words.

Ask questions neutrally

- Don't lead the participant.
 - Don't put words into the participant's mouth.
 - Don't blame the participant.
-
- ✗ Did you *like* the way the letter is organized?
 - ✗ Was that *easy* or *difficult*?
 - ✓ What is your general reaction to the letter?
-
- ✗ *Why didn't you* use the drop-down list?
 - ✓ In scenario 2 when you were trying to find the phone number for the Aberdeen office, I noticed that you tried several choices from the left column, but you didn't open the drop-down box. Can you tell me more about that?

Be neutral on written questionnaires, too

Please circle the number that best expresses how you feel about each statement.
We welcome your comments about each statement.

1. Overall, using the document was

1	2	3	4	5
Very easy	Easy	Neither easy nor difficult	Difficult	Very difficult

Comments: _____

2. Finding the information I needed in the document was

1	2	3	4	5
Very easy	Easy	Neither easy nor difficult	Difficult	Very difficult

Comments: _____

Note-taking – How do you capture key observations and comments?

- Prepare a form for note-taking.

P # _____ Date _____ Time _____ Note-taker _____

Usability Test – VA National Center for PTSD

Web site <http://www.ptsd.va.gov/>

Dates of the test sessions July 20 & 21, 2011

Place of the test sessions Bethesda, Maryland

Group Veterans and Friends and Family of Veterans

Part 1. Exploration Questions

Have you looked for health information on the internet?

What web sites do you typically go to for health information?

What other web sites do you typically visit?

We will now go to the web site.

Whose web site is this? and how do you know that?

Who do you think this web site is for? and how do you know that?

Identify
participant by number
date and time of session
note-taker's initials

Identify the test

Leave room to write answers
to your opening questions



P # _____ Date _____ Time _____ Note-taker _____

Scenario 1
You are worried about a friend or family member who has experienced a traumatic event. You wonder if this person may have PTSD. You want to find out the symptoms of PTSD. Please use the web site to find PTSD symptoms and tell me what some of them are.

Expected pathway	What participant did and said

← Identify each page so you can later analyze by scenario

← Put each scenario on its own page

← Leave lots of space for notes

← Sometimes, it helps to make a column for what you expect to happen – especially if finding the information is part of the task

Success?

- ☐ Yes, with no problems
- ☐ Yes, with some problems
- ☐ Yes, after a hint or help
- ☐ No

← If you are measuring success, you might put your options at the bottom of each scenario note page

✗ If the participant can see what you are writing, don't put success ratings on the note form
Wait and add that when analyzing your notes

Paper or computer?

P # _____ Date _____ Time _____ Note-taker _____

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Web site <http://www.ptsd.va.gov/>

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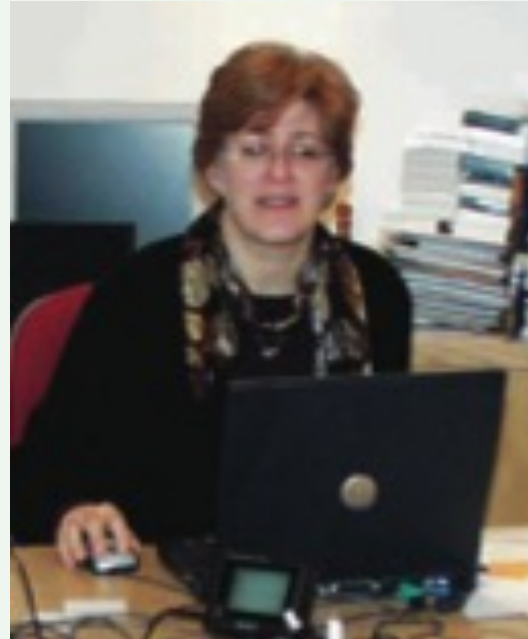
We will now go to the web site.

Whose web site is this? and how do you know that?

Who do you think this web site is for? and how do you know that?



Sitting next to the participant?
Use paper



Second team member as note-taker
sitting away from participant?
Laptop or tablet might be okay

What notes should you take?

- As you watch, you'll find yourself making inferences
– interpreting what you see

Observations = what you see people do

Inferences = what you think the behavior means

- Both are important, but understand the difference.
- Every interpretation (inference) is an assumption.
- Write down what you see and hear.
- Don't infer!
(or check your inferences with neutral questions)

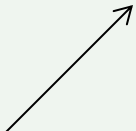
Separating observations from inferences

A little quiz to help you

U = user's comment (you heard it)

O = observation (you can see it)

I = inference (you think that's what it means)



If you cannot physically see the action in the verb, it's an inference.

- ___ clicked on [Account Info](#)
- ___ doesn't understand how the home page is organized
- ___ forgot to put in email address on feedback form
- ___ "Gee, this is confusing."
- ___ doesn't recognize that [Fees and Rates](#) is link she needs
- ___ clicked on [Insurance](#) by mistake, meant to go to [Compliance](#)
- ___ went back and forth from table of contents to page 5 three times

Analyzing your data

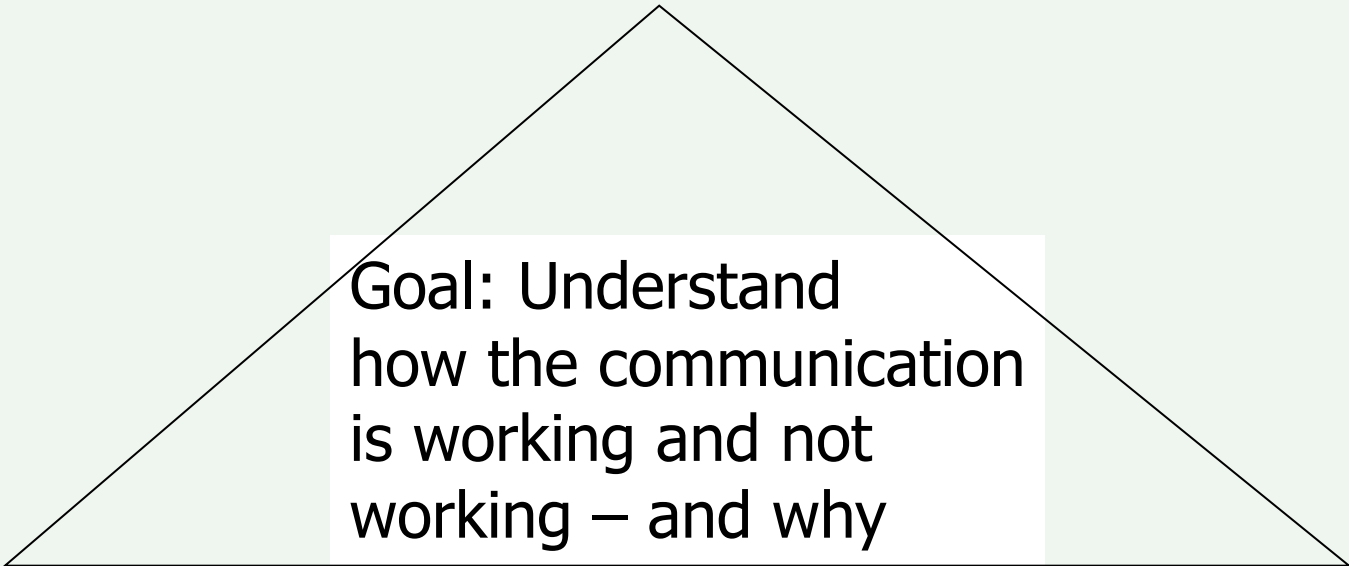


Success in a usability test

is getting useful information
about your issues
so you can improve what you were testing
– and improve the process for creating similar products

Triangulate your data

What participants did



Goal: Understand
how the communication
is working and not
working – and why

What participants said
and their answers
to your questions

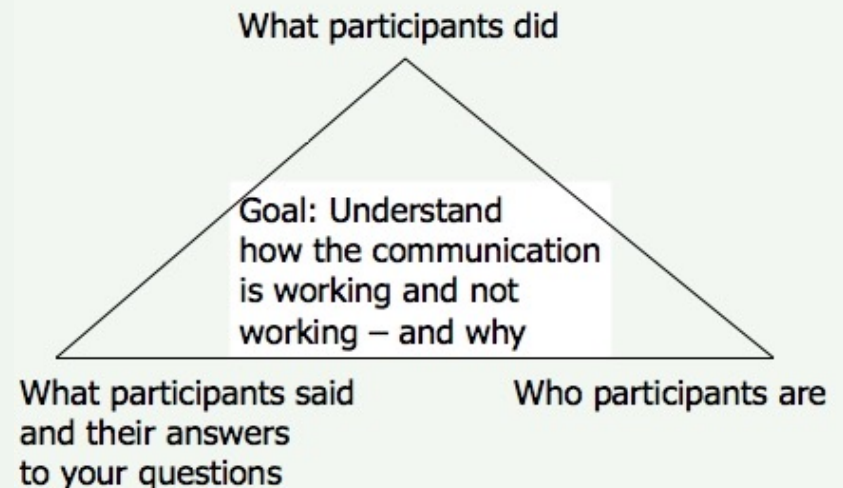
Who participants are

Is all the data telling the same story?

If so, great!

If not, why not?

- Do demographics explain differences?
- Does what people say differ from what they did?
(People often rate a communication highly even when they had a lot of problems using it.
Believe the behavior!)



Look for patterns in the data

You might use a matrix to see how many participants go with each observation or with similar quotes

	P1	P2	P3	P4	P5	P6
Observation 1	x		x	x		x
Observation 2	x	x	x	x	x	x
Observation 3	x	x			x	
Observation 4		x	x	x	x	
Observation 5	x	x	x		x	x
and so on						

Note: When working with participants, we may use their names. But when reporting, we respect their privacy and use P1, P2, etc. or report by characteristics if they are relevant.

Diagnose the problems

Scenario 1:

In trying to figure out the process for submitting a claim, all the participants missed the fact that they have to provide medical forms signed by a doctor. (That information is in the middle of a long paragraph.)

Scenario 3:

Only one participant understood that she could appeal a decision. (The information about appeals is the last sentence in a long paragraph on results of processing a claim.)

That's your data.

What's the real problem with this communication?

Is it this:

Participants had trouble finding information that is buried in long paragraphs or sections.

Categorize the problems

- Group your problem statements.
- For communications, you might need some or all of these categories (or others):
 - Problems with the content (missing, inaccurate)
 - Problems with the text (sentences, paragraphs, words, etc.)
 - Problems with the information design (type, space, etc.)
 - Problems with visuals (missing or inaccurate illustrations)
 - Problems with translation



Focus on global problems

Local problems affect one fact, one page, one menu ...

Global problems affect the product more broadly.

In a usability test, you see mostly symptoms of global problems.

Scenario 1:

Participants did not find information that is in the middle of a long paragraph.

Scenario 3:

Participants did not find information that is the last sentence in a long paragraph.





These two data points are probably symptoms of a global problem:

Participants did not find information buried in long paragraphs.

You would not recommend only rewriting these two paragraphs.

You would probably recommend: Write shorter paragraphs.
(or Use lists. or Write more – or more useful – headings.)

Focus on severe problems

-  ① Must change for people to succeed
-  ② Slows users down; frustrates users
-  ③ Minor problem (Fix them, but don't stop there.)
-  ④ Nice to have but not necessary

Fixing the most severe problems is often hardest,
but necessary!

Recommend solutions – think broadly

Most problems can be fixed in several ways.

You could probably recommend any or all of these solutions:

- Do nothing (maybe lose customers; lower productivity)
- Leave it and add more staff to answer emails and calls
- Redesign
- Reorganize
- Rewrite
- Change the policy or program
- Change the process for creating this type of communication

Of course, time, money, politics come in here. Advocate for users, but accept reality.

Reporting, including recommending changes



Communicate findings appropriately

Possible ways:

- working meeting with project team
- briefing for managers, other reviewers
- short memo of findings and recommendations
- distribute memo or report by email; share on intranet

Critical factors for success:

- ✓ Report when people need it.
- ✓ Report only as much as they need.
- ✓ Consider all your audiences. Decide best delivery methods and length for each audience.
- ✓ Communicate both verbally and in writing.
- ✓ Practice the "doctrine of no surprise." Let people know what happened before they get a written report.

Write a *short* report that is easy to use

- Your report should be
 - short and to the point
 - bulleted lists and tables
 - images with notes (callouts)
- Explain briefly
 - what you tried out
 - who participants were (not their names, but relevant characteristics)
 - list of tasks they did
- Focus on
 - positives and problems
 - data to support each positive or problem statement
 - recommendations for each problem

Relate what you learned back to the issues

- What did you learn about each of your issues?
- What else did you learn?
- What is working well?
- What needs to change?

issues → tasks → scenarios

→ findings (data) → problem statements

→ recommendations

Report positives as well as negatives



- No one likes to be told their "baby" is "ugly."
- Criticism is easier to take when the news is not all bad.
- You want the team to keep what is working well – not mess that up when making other changes.

Organize your report logically

- One logical way is to use the categories (Slide 51)
- Within the category, present each problem statement on a page or slide with a brief explanation and then data on which you based the problem statement

The problem statement

A sentence or two to explain or elaborate the problem.

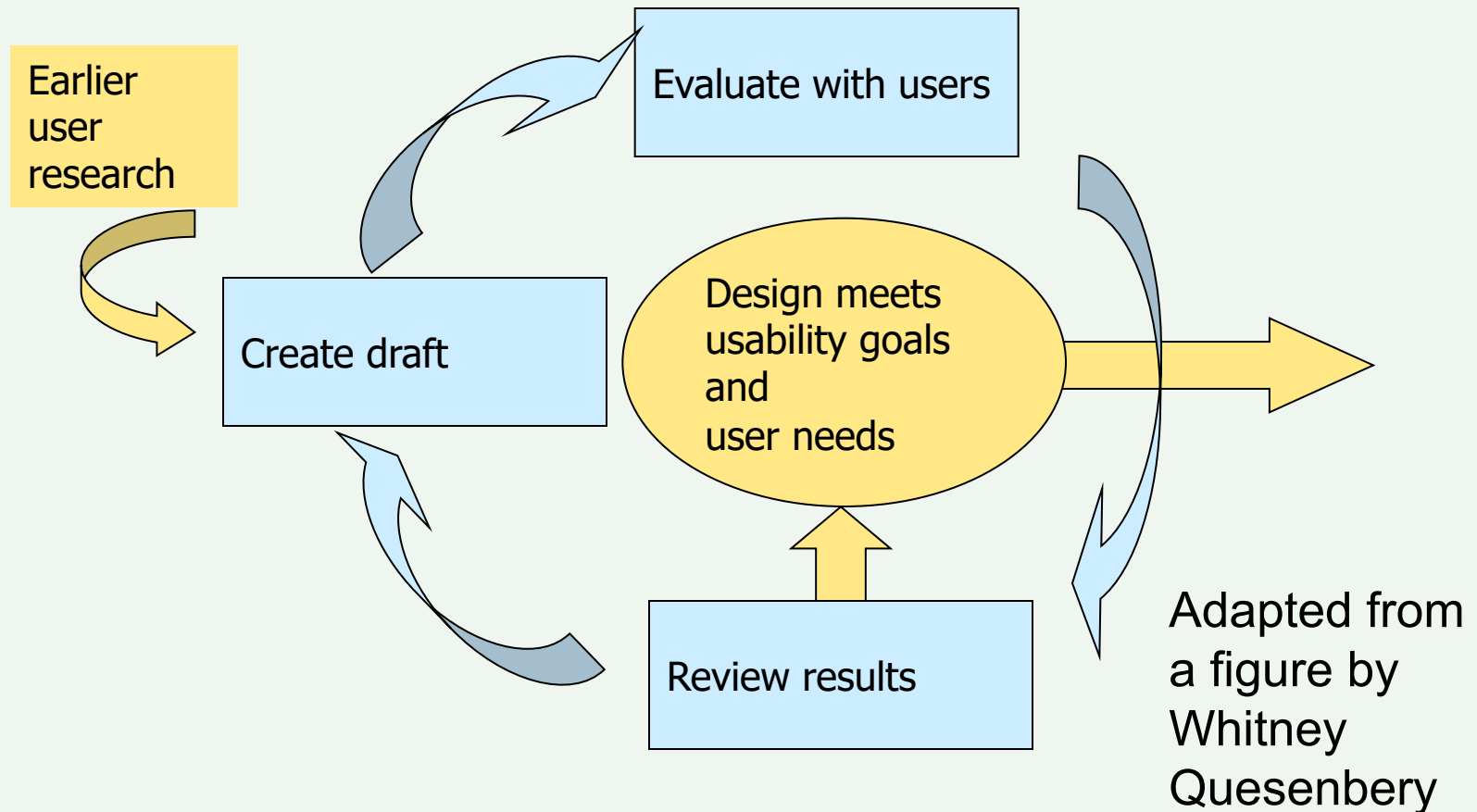
Observation 1.....

Observation 2....

Perhaps a telling quote

Act on what you learned

- Use what you learned to improve the communication
- Continue the conversation with users



Change the severe, global problems

If you don't attend to the severe problems needing global changes, you are putting on little bandages



If users can't find what they need and understand what they find, fixing the little problems won't make any difference.



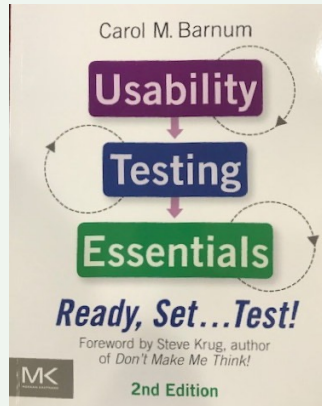
Change the process, too

Ask not only, "What's wrong?"

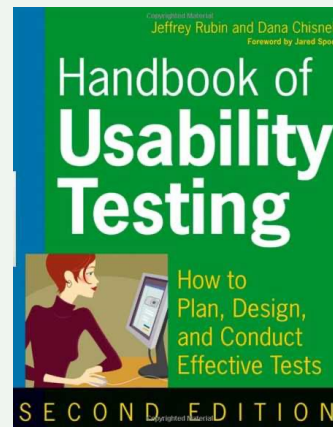
Ask, "How did it get that way?"

How will these authors avoid having the same problems in future communications?

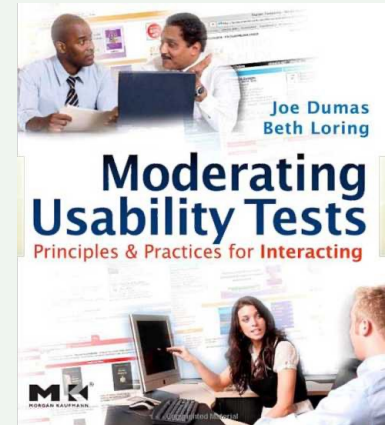
To learn more...



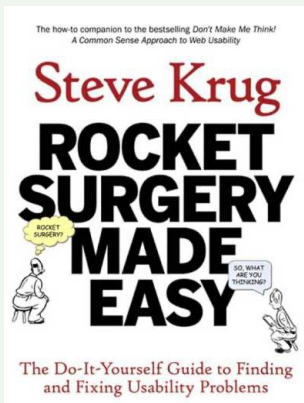
Barnum, 2nd edition,
2021



Rubin and Chisnell,
2008



Dumas and Loring,
2008



Krug, 2010



Dumas and Redish
1999



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