

# Getting the most out of a usability test:

## Effective note-taking and analysis

A workshop for User Friendly 2006  
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# 1 | Goals for this workshop

This workshop explores the idea that improving our note-taking skills can improve our ability to provide better information from usability evaluations.

As demand for usability increases, our profession faces two challenges:

## **Working faster: producing useful results in time for rapid product development cycles**

It can often take weeks (not days) to get feedback from a usability evaluation. In interviews with practitioners about their practice, many reported a lag of at least a week between sessions and report. Some delays were as much as six weeks.

## **Working better: making our results more useful and more reliable**

We need to be able to deliver high quality results from usability sessions. As businesses learn what usability can do to improve their products, we need to be able to answer many different kinds of questions about user experience and how well people can use a product.

Today, we will look at the connections between:

- What we observe and how we take notes
- How we create a useful analysis
- The goals for the usability work

And at techniques for generating insights into usability and user experience:

- Focusing observation on specific aspects of behavior
- Preparing for analysis with pre-analysis work
- Looking for patterns of usability problems

We will try to look beyond our current techniques to find ways to get the most out of a usability test

## 2 | The current professional landscape

The literature on usability testing discusses moderation skills in great depth, but pays little attention to note-taking and observation skills.

Jeff Rubin:  
Handbook of Usability Testing  
(John Wiley & Sons, 1994)

For example, Jeff Rubin talks about five activities in a usability test, with almost no attention paid to observing a test or taking notes.

1. Determine basics
2. Plan process
3. Create test situation
4. Conduct test
5. Interpret data

Other books include information on data collection tools like audio or video recording, eye tracking and loggers for recording timing and actions, or on how to log time-on-task and success metrics, or how to develop severity scales. But, they offer only two paragraphs on how to take notes

Stone, Jarrett, Woodroffe and Minocha: User Interface Design and Evaluation.  
(Morgan Kaufman, 2005)

Talking to other professionals, most take hand-written notes, or work with a logging tool. Some have developed their own forms. But few adapt their note-taking and analysis techniques to the specific needs of each project.

Solutions to creating reports in a timely manner include:

- Using a standard report template, making report-writing faster, but using the same style of analysis for each project
- Creating a short “highlights” report, with formal report later
- Using a team work session to decide on recommendations, and not creating a report at all

Information about CUE is available at <http://www.dialogdesign.dk/cue.html>

The Comparative Usability Evaluation (CUE) project has looked at how professional usability tests compare. Rolf Molich runs the CUE studies to:

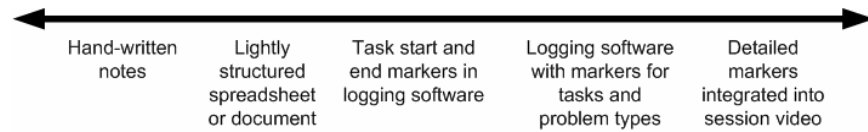
- learn how usability professionals carry out usability evaluations in practice
- compare the effectiveness and efficiency of the various approaches used
- advise the usability community on quality approaches to usability evaluation.

This project has focused on the consistency and value of the recommendations, rather than on how to observe.

### 3 | Tools and techniques for taking notes

? Is observation so simple that we do not need to teach it, or are we missing an opportunity to improve our practice.

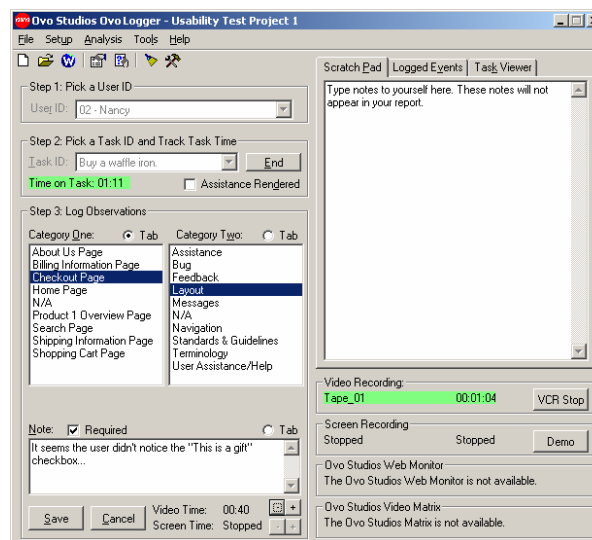
Most note-taking techniques have little structure, from informal discussions, professional practice covers a broad range:



- Hand-written notes are usually in a simple chronological format on a blank pad.
- Spreadsheets make it easier to go back and categorize notes later, and can include time markers notes on task or problem type.

A	B	C	D	E	F	G	H	I
P	#	Time	Task	Page	Action Details	O	Participant Comments and Quotes	Observer's Note
P1	1							
P1	2			Home Page				
P1	3			Sign In				
P1	4			Account Name				
P1	5			Account Address				
P1	6			Account Confirm				
P1	7			Account Please Wait				
P1	8							

- Simple usability test logging tools capture your notes with a time-stamp and information to identify the task, type of note, type of problem and user success.
- Special purpose usability software integrates notes with the video of the sessions.

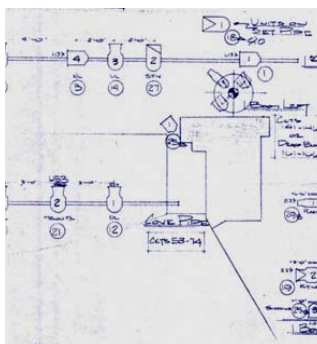
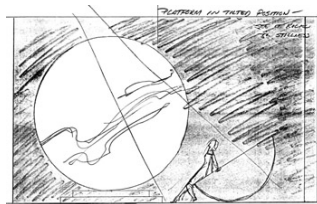


(Free Ovo Logger <http://www.ovostudios.com/ovologger.asp>)

## 4 | Inspiration from other professions

Usability borrows from many fields: psychological testing, market research, and other behavioral disciplines. Many other disciplines have techniques for describing live events.

- In dance, a system called Labanotation can be used to reconstruct the choreography of a dance, even by people who have not seen it performed.
- In the early days of radio, sports announcers would create a story of the of the game for local audience. They received very simple descriptions of the action by telegraph, and created an entire narrative of the game.
- In theatre, lighting designers have developed systems to annotate observation of live events and capture observations on intangible aspects of the experience. The system connects the script, the action and the design and allows the designer to take notes while observing a live rehearsal.
  - *Blocking sheets* create a visual description of the action
  - *Cue sheets* describe the place in the script and action on the stage that will trigger the change in lighting
  - *Tracking sheets* document the technical details of the lighting, including timing, duration and visual effect



Center for Contemporary Opera  
Henry St - Dallas Playhouse  
**TOMORROW! TOMORROW**  
Drew Whitney Queisenbery  
March 1987

Act	Scene	Time	Tempo	Color	Effect
1	2	3	4	5	6
7					
8	9	10	11	12	
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36
37	38	39	40	41	42
43	44	45	46	47	48
49	50	51	52	53	54
55	56	57	58	59	60
61	62	63	64	65	66
67	68	69	70	71	72
73	74	75	76	77	78
79	80	81	82	83	84
85	86	87	88	89	90
91	92	93	94	95	96
97	98	99	100		

15  
Cue

## 5 | Understanding goals for usability research

Usability research should always have clear goals – getting the question right makes it easier to get a useful answer. Three categories of research goals are:

### 1. Understanding users

- Understand people's background, motivation or decision-making
- Uncover requirements for functionality or usability

### 2. Understanding patterns of use

- Discover how people approach a task
- Observe how they use the product for their own goals
- Find aspects of the interface or interaction that are confusing

### 3. Measuring success

- Learn how well the product supports users in completing tasks
- Learn how accurately or efficiently they use the product

If we understand the goals for the work, we tailor our observations and note-taking to support effective (and faster) analysis.



**What are some goals for usability research you have worked on recently?**

Here are some examples from my recent projects:

- Expanding a product offering to reach out to a new group of users. How were these people different from their current customers, and how well did the current web site work for them?
- Creating a new e-commerce site. Would typical visitors be able to use the site to find and purchase products.
- Launching a new product: Where are users likely to have problems, so we can plan educational materials and plan for technical support.

## 6 | Taking structured notes

Another solution is to structure the note-taking form to collect the data needed to match the goals of the test. These can be paper forms, or electronic, using a word processor or database.

### Example:

In a comparative test of two ballot systems, we designed a set of sheets that would let us rapidly review session notes for:

- How long users took with each system? Was one more efficient?
- Were users equally successful in using each of the systems
- What possible problems can we fix. (We brainstormed: completing all steps, making changes, handling the privacy sleeve.)

P: 11	Start/End: 2:33-2:44	First: OpScan
Participant Demographic Notes Linda, 48, female, Caucasian. Tank top, shorts, sneakers, I've voted every time since I could. Arlington Heights for 17 years, but has voted on punch cards everywhere she's lived.		
DRE-Edge 2:47 – 2:53 Touchscreen? (yes) Looks at the instructions. She's marking by swiping her finger across the circle. Trying to make a change. Presses review, goes back to the race, reads instructions to figure out how to make a change. She still hasn't gotten it. – she tried to touch the other one to make it change. She does it, but I'm not sure she really learned it Into the review screens. Doesn't really know what's happening. Looks at instructions, presses next on last screen. Presses print. nothing happens. she looks at instructions Printing starts and she watches it go by. On the last screen she presses Vote, then tries to touch the vote button that comes up when the screen is flipping to the Your vote is recorded screen.		
Making changes		
Reactions She thinks she had no problem with making changes. That's nice. It's faster (no it isn't) Does it say it's a touchscreen anywhere? It should say it somewhere on the screen. Had a personal story about a screen they thought was touchscreen, but they really had to use a mouse.		
Success: Yes		Time: 6 minutes
Printed Ballot, circles 2:36-2:41 Worked right through, then put it back in the sleeve (per instructions)		
Optical Scan Ballot Checker-Optech Insight Not much fumbling with the sleeve. Ballot accepted. Reactions: It's too busy. You really have to make sure. I like that the boxes are big enough. With the punch thing you have to really count. It's too big. I had to keep pushing it up to the back. "It would be this big?" Needs better separation between the races. You're going to get people, they are not going to understand this. They are just not going to understand it. Dona: what about the privacy sleeve. I don't think it's a big deal. I never understood this whole thing. Maybe now because it's visible...ok, now I could see...yes...but there probably are people who.... Dona: so having something is important. yes		
Privacy sleeve		
Success: Yes		Time: 5 minutes

## 7 | Observations and inferences

Dumas and Redish. A Practical Guide to Usability Testing. (Intellect Ltd, 1993 and 1999)

In her book on usability testing (and in her workshops on conducting usability test), Ginny Redish talks about the importance of distinguishing between *observations* (or *quotes*) and *inferences*:

- Observations: what you actually see
- Quotes: what the user says (also called “verbatim”)
- Inferences: what you think the behavior means

They are all important, but we want to keep them separate in our notes.

Are these observations, quotes or inferences?

- clicked on logo to go back to home page
- doesn't understand how the home page is organized
- “Oh. This is confusing.”
- doesn't recognize that the Go to Section link is the one he needs
- selects *an item* from the dropdown list, then immediately make a different choice
- clicks on Reset Form by mistake
- shakes head “that's not what I thought it would do”

One way to keep track of these three kinds of notes is to put them in separate columns. Be sure to leave plenty of room in each box to write notes.

Participant: < put the participant ID on every page >		
Task: < put the task description at the top of the page >		
Participant's Actions	Quotes	Your Comments
Clicked on the FAQ button	“This doesn't look like the information I want”	Is this the right label for this section?



## 8 | Observing different aspects of user experience

A lot happens in a usability session. Let's break it down into different things we can observe, and see what we can learn from focusing each aspect separately.

### 1. Tasks and timings

Observation focused on how the participant approached a task.

- How did they get started on the task?
- What steps did they take to complete the task?
- How direct was their path to complete the task?
- Were they successful?

### 2. Actions and reactions

Details of their behavior and interaction with the site or product

- What do they do when they first enter a new page?
- How do they move around a page or form?
- What is their interaction style and how confidently do they make choices?

### 3. Attitudes and words

Thoughts or emotions they express

- What are their exact words in reacting to the product?
- What is their body language or facial expression?
- What emotions do they express?



**What other things should we look for as we observe usability sessions.**

## 9 | Observation Practice

We will practice three different ways of taking notes, observing different aspects of user experience.

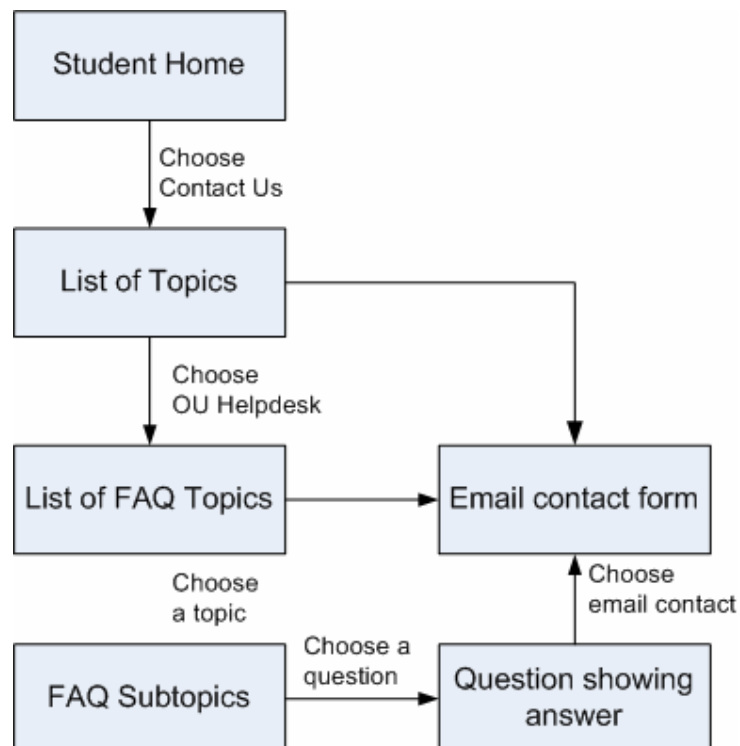
### About these usability session clips

All learning at The Open University is distance learning. Students receive their course books and other materials to work with at home, but they must also use the university web site to communicate with their tutors, for course discussions, to submit their assignments, and sometimes for some of their course materials.

The OU computing support help desk is creating a knowledge base of frequently asked questions and their answers, and wanted to learn if their design would work.

In the usability test, participants worked with a prototype, with realistic content. It was one section of a larger usability test of other new features on the personalized home page for students.

Here's the path that the designers envisioned:



## 10 | Observing Tasks and Timings

How does this participant attempt to complete this task? What is his path through the site, and what kinds of problems does he have in finding the answer to his question.

Participant: \_\_\_\_\_ Observer: \_\_\_\_\_

<b>Path through the site</b> Note pages visited, and where navigation links	<b>Timings</b> Note how easily or quickly each step is taken	<b>Comments</b> Your notes on barriers and progress towards the goal.
Success?	Participant's reaction to this experience?	

# 11 | Observing Actions and Reactions

Observe the details of the interaction, including how the participant moves around a page or form; uses mouse or keyboard and other details.

Participant: \_\_\_\_\_

Observer: \_\_\_\_\_

<b>Path within a page</b> Sketch any patterns of action within a page.	<b>Actions</b> Details of interaction with controls or content on the page.	<b>Comments</b> Your notes on behavior.


## 12 | Observing Attitudes and Words

What does this participant say about the task, interface or experience?

Participant: \_\_\_\_\_

Observer: \_\_\_\_\_

<b>Page/Task</b> Note the page or task	<b>Quotes</b> Capture as many quotes as you can from this participant	<b>Comments</b> Your notes on emotion or attitudes



Let's talk about...

What was it like to focus on just one aspect of the user experience?

Focus on...	Best for...	Not so good for...
Tasks & timings		
Interaction		
Attitudes & quotes		

## 14 | Sharing information in a team

Usability teams used to be just one or two people. But, one of the trends is for usability to be included in a user experience team that might include information architects, interaction designers, user researchers (both market research and ethnographers)

### Benefits for a usability team

As usability teams grow, it's important to be able to work together effectively.

If the team works together on projects:

- Each team member can focus on a different aspect of the participants' experience. This gives the project a richer mix of notes than if everyone took the same notes.

If team members work on different projects

- Having different aspects of the observations separated makes it easier to share insights on specific aspects of user behavior or product usability

If the team works over a long period of time

- It's easier to track trends on use of functionality, attitudes or other usability issues

### Sharing information

As usability becomes part of larger user experience teams, it's important to be able to share information in a useful way.

In Contextual Design a technique they call "sharing sessions" are used when members of the team have conducted usability or user research sessions with different participants. The goal of these sessions is to create a shared understanding across the larger team.

Holtzblatt, Wendell and Wood. Rapid Contextual Design. P120-122. (Morgan Kauffmann, 2005)



**What kinds of teams do you work on?**

**Who do you share usability data with?**

## 15 | Getting good notes from observers

If you have people who are not part of the usability team observing a test, it can be helpful to give them an assignment, suggesting specific aspects of the session they can focus on.

For example, when everyone on the product team was asked to observe at least one session, we gave them guidelines for their notes. Before the sessions, the product and programming managers identified some issues where the team's deep knowledge of the product might help with observation.

It was a good trade. We shared the kinds of questions we were trying to answer. They gave us notes that were helpful, and added to our insights.

The most important benefit was that they were more involved in the usability testing:

- We (almost) never had to remind them to stay quiet and focus on the session.
- They had a better understanding of our goals, and
- They accepted the usability report and recommendations more readily

Some of our instructions on things to look for:

- How does the participant interact with the software – for example, do they use hotkeys, menus or buttons to access a function.
- What words does a participant use to describe their tasks? Look for different levels of knowledge and terminology
- How well can the participant navigate around the program. Are they taking an ideal path, or are there better ways to complete the task?

### NOTES ON WATCHING A USABILITY SESSION

On your notes sheet, please include:

Your name | The participant number, day and time | The program (and which to do)

How does the participant interact with the software?

Look for different interaction styles and how they affect how easily the participant can use the programs.

- Do they use the mouse or keyboard to move around the program or within a page?
- There are often several ways to use a function – click on a button, use a hotkey, use a menu.
- Does the participant tend to use just one, or do they use different interactions for different controls?
- Do they use the menu at the top of the window? toolbar buttons? context menus?
- Are there interactions that they never use?

What words does a participant use to describe accounting and business tasks?

Look for different levels of accounting and business knowledge

- What accounting concepts are familiar or unfamiliar? Does this affect how they approach or complete a task? Is there? Does this affect how they approach or complete a task?
- What terminology do they use for accounting terms? Does this affect how successful they are in using the software?

How well can the participant navigate around the program?

Look for navigation problems – both how, and how easily, they move from window to window

- Do they "learn their way around" the program, or have to hunt for every task?
- Are there controls that they don't see, or don't know how to search for?



## 16 | Getting to know the data

In between the sessions and the detailed analysis, you need to organize your notes. For example

- If you have done interviews, you usually need to clean up or transcribe your notes.
- Survey data, task success or other metrics have to be entered into a spreadsheet or analysis program.
- If you are doing an affinity analysis, you need to get all the notes collected and put onto cards or post-its (or into any software you are using).

You also need a way to get to know the data, so you can begin to make sense of what you observed. Three exercises that help you get to know the data are:

- **Participant summary sheets**  
Collect each participant's story in a compact, summary format
- **Path documentation sheets**  
See how many different paths participants took through each task
- **Identifying the location of problems (and successes)**  
Look for clusters of problems in area of the interface



**How do you prepare for analyzing test data?**

# 17 | Participant summary sheets

Participant summary sheets consolidate information about each participant to let you review each session quickly, or in preparation for a team sharing exercise.

- They can help you consolidate notes from several people.
- They are a good way to gather your notes while the session is fresh in your head, especially if the project will take place over a period of time, or sessions are run by different people.
- They are especially useful if one of your goals is to understand attitudes or personas of different users

The details will vary depend on the project, but here's a typical template:

Participant ID		Persona or other user group
Photo or description	Demographic and background details	Summary of attitudes or behavioral characteristics
<b>Observations and Quotes</b>		<b>Sites, functions or pages visited</b>
▪ List here		List here

This example is from a project investigating what consumers found attractive about different types of sites.

We were interested in their reactions, rather than exactly how they completed specific tasks.

P1 - Judith		Attitude: Concerned
	<ul style="list-style-type: none"> <li>• 60-69 years old</li> <li>• Gallery owner</li> <li>• Uses the web to communicate with her artists</li> <li>• Internet Use: since 1996; multiple times a day</li> </ul>	<ul style="list-style-type: none"> <li>• Skims sites for most valuable information</li> <li>• Will read entire article if interested in what it's saying</li> <li>• Impatient with new sites or long lists, but persists</li> <li>• Gets aggravated when articles are too short</li> </ul>
<b>Comments, Quotes, and Observations</b>		<b>Sites Visited</b>
<ul style="list-style-type: none"> <li>• "I have no patience... I want it when I want it"</li> <li>• (How do you narrow?) "I've never found a way."</li> <li>• "I don't have time to spend time going through seven pages looking at what they want to show me."</li> <li>• "The paragraph should tell me what's on the site."</li> <li>• "I don't like it when I feel they misled me."</li> <li>• "I've found that sometimes the same word [in different order] gives different results, so you just have to keep trying."</li> <li>• "I've never been on this site...when it's the first time I'm in, I'm not going to take the time to look at all their stuff."</li> <li>• "I don't pay attention to blinking things ...that would just try to sell me something."</li> <li>• (Merck Praxis, on why she browsed rather than searched) "It's easy to see. I tend to associate more with the left side than the right side. I see the search, but this is so interesting and easy that it almost forced me to read it."</li> <li>• "It looks like there is nothing in their titles that would give me the answer without clicking on each article and reading it."</li> <li>• "It's the yellow pages. Have you ever tried to find something in the yellow pages..."</li> <li>• (Short or long articles?) "Depends on what I want. I get aggravated when the articles are too short."</li> </ul>		<ul style="list-style-type: none"> <li>• Advanced Google</li> <li>• FDA <i>I don't have a good feeling about the FDA</i></li> <li>• About.com <i>I can get almost anything I want out of there</i></li> <li>• <a href="#">WebMD</a></li> <li>• <a href="#">Detroit LA</a></li> <li>• <a href="#">Medline</a></li> <li>• Merck Home Edition</li> <li>• JAMA</li> <li>• <a href="#">PubMed</a></li> <li>• Yahoo Health!</li> <li>• Merck Praxis <i>This is so interesting that it almost forced me to read it</i></li> </ul>
		<b>Design Needs</b>

**Participant:** \_\_\_\_\_

<b>Computer experience</b>	<b>Interaction style</b>
What is their computer experience and how do they usually get help?	What can we learn about how they use the web, and their experiences outside this site?
<b>Path through site</b>	<b>Observations and quotes</b>
What is their path: links, pages and interaction within a page?	Observations of actions, problems or user quotes
<b>Summary</b>	
Your summary notes on this session.	

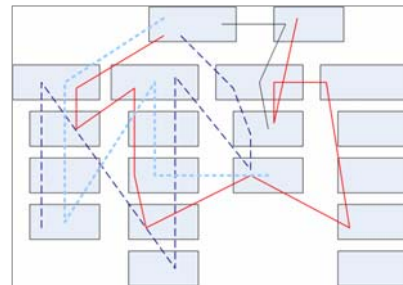
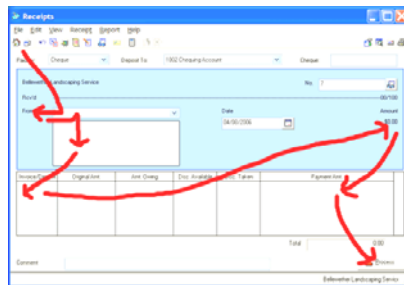
## 18 | Path analysis

Path analysis lets you see visually information about how participants navigate through a site, task or application. You can use path analysis to find out:

- How similar, or how different, is the path that participants take?
- Where do paths diverge and where do they overlap?

You can do this for the whole site, for a task, or even on a single page.

You don't even have to be able to read the screen to start to see what some of the problems are.



This technique is similar to using printouts of the pages to walk through a task, or do a “personas walk-through”

The ribbons showed the path through a web application for common tasks.

Sticky notes showed places where links were needed.



**Use the notes from the “tasks and timings” sheet to draw the path taken by each participant, and then consolidate them into a single drawing.**

## 19 | Identifying problem density

We often keep track of how many participants encountered a particular problem, but it can also be useful to be able to see how problems are distributed around an interface.

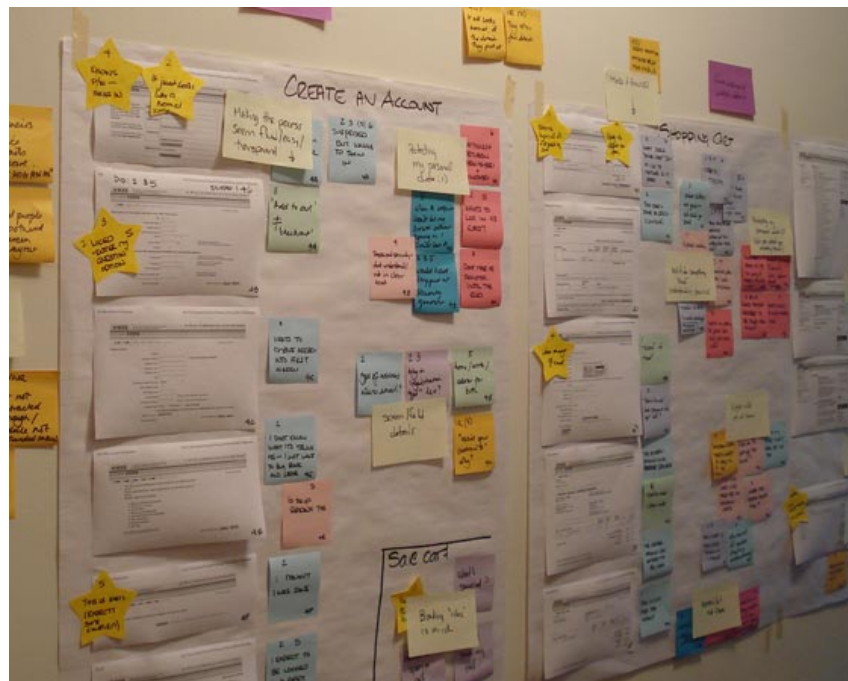
One way to do this is by placing post-it notes next to screen shots of the site. This makes it easy to see which pages caused the most problems, and where those problems were located on the page.

This was a comparative test of two versions, and it was clear from this that some pages were much better in one version than the other.



This identified both the page where each note occurred, but also the number of participants who had a similar note.

We also captured successes or positive comments with the stars.



Of course, you can use a spreadsheet or word processor, but it's nice for everyone to be able to see the whole thing, and to work on it together.

**Work together to identify the location of the problems that each of the participants encountered on each page, and note how many participants had the same problem.**

## 20 | Moving into analysis

At one level, the work of reporting on a usability test is to collect and categorize the problems, and come up with a list of recommendations to improve the product.

A deeper level of analysis is to look for the source of the design mistakes. If we can find a pattern in the type or source of problems, we can not only give specific, detailed recommendations, but can provide a deeper level of understanding of why people are experiencing usability problems with the product.

There are four basic models that appear in many usability tests:

- Finding – recognizing – using
- Appearance – conversation – relationship
- Task concept mismatch
- Micro barriers

All of them require careful attention to the distinction between observation and inference: what you see and hear, and how you interpret it. In analysis, this becomes a three-step process:

1. Identify exactly what you observed
2. Identify the causes of any problems
3. Develop solutions or recommendations

This helps you avoid the pitfalls of jumping directly to recommendations:

- You don't miss the chance to think carefully about what *actually happened* during the test. Sometimes you will be surprised!
- You can carefully consider different reasons why problems might have happened.
- You build consensus for your recommendations, or may not leave room for a better solution to the problem.



## 21 | Using the 3 analysis steps

### A short case study

In this project earlier user research had identified the first questions people had about any new drug. In a usability test of early wire frames, participants had a lot of problems finding the pages with the answers to those questions.

There were a lot of politics in this project.

It was important for us to gain acceptance for the recommendations for the test, and this process helped us do that.



1. **What we observed:** Users did not click on this link, but when we guided them into the section, they agreed that there was the right group of pages, with information they wanted.
2. **Analysis of the cause:** We considered whether the IA was wrong, the position on the menu was wrong, or whether the label was wrong. We decided: the label was wrong.
3. **Developing a recommendation:** The obvious solution was to create a new label. Everyone had an opinion. We collected a list of possible solutions and all of the quotes and comments from the participants, and sent the designer home to think about it.

He came up with:



Outcome: No problems in the next usability test.



**Do you have any examples of how you have helped a team follow usability data to a logical conclusion?**

## 22 | Find, recognize, understand, use

Ginny Redish defines usability as the ability of a person to find what they need, recognize and understand what they find, and make use of it to meet their goals.

**Finding:** Participants cannot find the links, functions or information they need. Signs of “find” problems are excessive hunting, ping-ponging or scrolling up and down a page.

This may indicate:

- A visual design problem, with something “hiding in plain sight”
- An information architecture problem, with the information or task organized in ways that don’t match expectations
- A language problem, with functions labeled in unrecognizable ways

**Recognize and understand:** Participants may reach the right page, but not realize that the information or function they need is there. Or they might find the information, but not understand what it is saying. Signs of “recognize” problems are seeing the participant reject a valid choice, or act on controls or information in a way contrary to design expectations.

This may indicate:

- A problem in how information is presented or worded
- Poor labels on controls
- Visual design that hides the cues the participant needs

**Use:** The key to this type of problem is to understand that it’s the participant’s goal that must be met, not just part of a task, like completing a form. ‘Use’ problems often show up as poor task success, or even a situation where the participant thinks they have succeeded, but did not complete their task, or did so inaccurately.

This may indicate:

- Weak or inaccurate feedback on the result of user actions
- Poor prompts or instructions in the interface or help system

## 23 | Appearance - conversation - relationship

This model is based on the three layer theory of forms. This theory applies to any user interface, but are especially good for thinking about interactive applications. The three layers are:

1. Appearance
2. Conversation
3. Relationship

Caroline Jarrett's Three Layer Model of Forms can be found on FormsThatWork – [www.formsthatwork.com](http://www.formsthatwork.com)

**Appearance** is the presentation of the page, including all of the visual design aspects such as use of fonts, colors, images and white space. It also includes issues like what elements on the page have focus, and whether the text is in a large block (a “wall of words”)

**Conversation** is both the style and tone of how the product “talks” to the participant with the text and other labels, but also how the user interacts with it.

**Relationship** is built on the assumptions that the product and user make. It includes considerations like the level of knowledge the product assumes the user will have. It covers business relationships (like having an account) and trust issues around personal information. It also covers issues that might come from a different perspective on what is important.

Sometimes there will be problems in just one layer, but these three layers can each have problems that interact with each other to create complex usability problems.

## 24 | Task concept mismatch

Sometimes the product and the participants disagree about how they want to approach and complete a task. They might even disagree about the goals. When this happens there's a collision of basic mental models.

There are several variations of mismatches in the task concept, each with a different cause. It might be politically important to understand which one is causing the usability problems.

**“Technical bleed”** – when the data architecture was used as the basis for the user interface, we would say that the technical design was bleeding into the user interface design.

**Task analysis failure** – the mismatch might be caused by a failure to understand how typical users think about a task, or when they want to follow a different approach than the one the product supports.

**Goals mismatch** – sometimes the product wants users to change the way they work, or to change their goal, and the interface is designed to meet business goals rather than user goals.

## 25 | Micro barriers

On a project last year, Caroline Jarrett and I encountered a product that had many, many small problems, that added up to a big usability problem. The product didn't fit into any of the analysis models. There were just a lot of little usability flaws that made the participants stumble. None of these problems were very severe on their own, so we called them "micro barriers"



**Are there other examples of analysis models that you have found?**

**Which of these models best fits the sessions we watched? Organize the observations and your analysis to show why.**

#### Structured note-taking techniques

- Separating observations from inferences
- Tasks and timings: focused on how the participant approached a task
- Actions and reactions: details of behavior and interaction
- Attitudes and words: thoughts or emotions participants express

#### Getting to know the data

- Participant summaries
- Path analysis
- Problem density analysis

#### Analysis approach

1. Identify exactly what you observed
2. Identify the causes of any problems
3. Develop solutions or recommendations

#### Analysis models

- Finding – recognizing – using
- Appearance – conversation – relationship
- Task concept mismatch
- Micro barriers

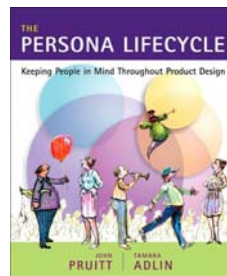
## 27 | About Whitney

Whitney Quesenbery is a user researcher, user experience practitioner, and usability expert with a passion for clear communication.

As the principal consultant for Whitney Interactive Design (WQusability.com), she works with companies around the world to develop usable web sites and applications. Her recent projects include work for The Open University, National Cancer Institute and Sage

As an advocate for usability, Whitney has been president of UPA, runs the popular STC Usability web site, and leads a project creating guidelines for usability test reports. She is on two US Federal Advisory Committees, working to improve the usability and accessibility of voting systems and on an updates of “Section 508”, the US accessibility laws.

Whitney is a frequent contributor to industry publications, including UPA’s UX magazine, uiGarden, UXmatters, <interactions> and STC’s Intercom



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Chinese versions of my articles, available online

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[平衡5E:可用性](http://www.wqusability.com/articles/5es-citj-cn.pdf) - Balancing the 5Es  
(<http://www.wqusability.com/articles/5es-citj-cn.pdf>)

[地球另一边的可用性](http://www.uigarden.net/chinese/di-qiu-ling-yi-bian-de-ke-yong-xing) - Usability Half-Way Round the World  
(<http://www.uigarden.net/chinese/di-qiu-ling-yi-bian-de-ke-yong-xing>)

[信任与责备](http://www.uigarden.net/chinese/xin-ren-yu-ze-bei) - Trust and Blame  
(<http://www.uigarden.net/chinese/xin-ren-yu-ze-bei>)