



Usability Testing

Notes from

http://www.usability.gov/methods/test_reline?learnusa/index.html

1



Usability Testing

- Testing it with representative users
 - users will try to complete typical tasks while observers watch, listen and take notes.
- Goal is to identify any usability problems
 - collect quantitative data on participants' performance (e.g., time on task, error rates)
 - determine participant's satisfaction with the product.



<http://www.90percentofeverything.com/2009/07/24/more-dilbert-on-user-experience/>



When to Test

- You should test early and test often. Usability testing lets the design and development teams identify problems before they get coded (i.e., "set in concrete"). The earlier those problems are found and fixed, the less expensive the fixes are.
- Tests main flow on paper prototypes



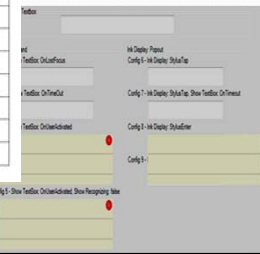
Test little bits

- A stylus friendly edit control

Table 1: Different configurations for the ink enabled text box

Text boxes	Show Text box			Show Ink Input Area			Has Observed Keyboard	Votes	
	On Lost Focus	On Timeout	On User Activated	Expand	Pop-up on 100ms Enter	Pop-up on 100ms Tap		Easy to Use	Difficult to Use
1	✓			✓				1	2
2		✓		✓				1	5
3			✓	✓				1	0
4			✓	✓				1	0
5	✓		✓			✓	✓	5	0
6	✓	✓				✓	✓	3	0
7	✓		✓		✓		✓	2	1
8	✓	✓		✓			✓	1	0

* with an icon to indicate when recognizing



Seneviratne, N. and B. Plimmer. *Improving Stylus Interaction for eMedical Forms*. in *OZCHI 2010*. 2010. Brisbane: ACM: p. 280-287.



How to test

- Know what your goal is
 - Navigation
 - Specific task
 - Specific control
- Observe
- Record (Morae – In a later tutorial)
 - Co-located
 - Remote



What You Learn

- Complete routine tasks successfully
 - how long it takes to do that.
- How satisfied participants are with your interface.
- Identify changes required to improve user performance.
- Match the performance to see if it meets your usability objectives.



Two iteration evaluation

- Big problems mask little ones

Notations	Total	First Round						Second Round						
		Team 01	Team 02	Team 03	Team 04	Team 05	Team 06	Team 07	Team 08	Team 09	Team 10	Team 11	Team 12	
Problems														
Formal: Try to add/edit letters after creating a shape	3	1		1										
Formal: Try to drag/enlarge	2	1												
Formal: Try to delete shapes in select mode	3		1	1	1									
Formal: Try to draw a shape instead of a single-click	2				1									
Formal: Expect to sketch circles in 4 directions	1	1												
Formal: Look for a way to cancel a shape when creating	1		1											
Formal: Try to sketch a letter in formal	1													1
Formal: Click on the top left corner for rotation										1				
Formal: Hard to handle the angle of rotation													1	1
Sketch: Drag move before selecting										1	1			
Both: Try to move the letters separately	3	1	1		1									
Both: Expect the position of pencil button to be the first	2	1				1								
Both: The purposes of buttons are not clear enough	2	1	1											
Both: Expect the default mode to be pencil	1	1												
Both: Ask for built-in samples	1	1												
Both: Indicator of processing is required	4			1		1		1	1					
Both: The default distance between shape and label is too	3						1	1	1					
Both: Try to delete a shape by clicking on the area not the	3	1						1	1	1				
Both: The instruction of "new graph" button is too long	4	1		1				1	1					
Bugs:														
Both: Unrecognised stroke does not work with undo/redo	1		1											
Sketch: Error message when switching selection between s	1													
Both: "File is protected" error message when saving a file	2						1	1						
Both: Duplicate letter are not properly handled	2	1	1											



Making Use of What You Learn


- Someone designed what you are testing
 - They may be defensive / offended that their design isn't already perfect.
 - Usability testing is not just a milestone to be checked off on the project schedule. The team must consider the findings, set priorities, and change the prototype or site based on what happened in the usability test.
- Find the Best Solution
 - Most projects, including designing or revising computer interaction, have to deal with constraints of time, budget, and resources. Balancing all those is one of the major challenges of most projects.

Improved User Satisfaction!

	First Round					Second Round					1st Mean	2nd Mean	Difference	
Sketch:														
Understand the tasks	4	5	5	5	5	5	5	5	5	5	4.86	5.00	0.14	
Easy to find buttons	3	5	4	5	4	5	5	4	5	5	4.29	4.80	0.51	
Easy to create	3	5	4	5	4	5	5	4	5	5	4.29	4.80	0.51	
Easy to edit	3	5	4	5	4	5	5	3	5	5	4.00	4.60	0.60	
Overall easy	3	5	4	5	3	5	5	4	5	5	4.14	4.80	0.66	
Formal:														
Understand the tasks	5	5	5	5	5	5	5	5	5	5	5.00	5.00	0.00	
Easy to find buttons	4	4	4	5	4	5	5	5	5	5	4.43	5.00	0.57	
Easy to create	3	5	5	5	4	5	5	5	5	5	4.43	5.00	0.57	
Easy to edit	2	5	5	5	4	5	5	5	5	4	4.43	4.80	0.37	
Overall easy	3	5	5	5	3	5	5	5	5	5	4.43	5.00	0.57	
Switching:														
Understand the tasks	4	5	5	5	5	5	5	5	5	5	4.86	5.00	0.14	
Easy to find buttons	3	5	4	5	5	5	5	4	5	5	4.57	4.80	0.23	
Easy to create	3	5	5	4	3	5	5	5	5	5	4.29	5.00	0.71	
Easy to edit	3	5	5	5	5	5	5	5	5	5	4.57	5.00	0.43	
Overall easy	3	5	5	5	4	5	5	4	5	5	4.57	4.80	0.23	
General:														
Satisfied with amount of time	5	5	5	5	4	5	5	5	5	5	4.86	5.00	0.14	
Satisfied with ease of completing	4	5	5	3	4	5	5	5	5	5	4.29	5.00	0.71	
Conversion of shape is accurate	2	5	5	5	4	5	5	5	5	4	4.29	4.80	0.51	
Conversion of text is accurate	3	5	5	5	4	5	5	4	5	5	4.43	4.80	0.37	
Would like to use again	2	5	4	5	4	4	5	5	5	5	4.14	4.80	0.66	

Tips

- Testing the Site NOT the Users



<http://www.90percentofeverything.com/2009/05/26/dilbert-on-user-experience/>

Test Planning

- A good plan is absolutely essential for a good test and defensible results.

Results

- It is often difficult to *sell* your results
- Numbers are convincing
- Video of puzzled users is very compelling