

FluidIA: Evaluation Cycle II

Research Goals

To validate the usability of the product concept and identify areas where users are having the most amount of difficulty.

Test Setup

Same as in the first test cycle, a high fidelity usability test was performed in order to obtain further feedback on the usability of the design. Four people have been tested in their natural working environment. The prototype was running on a laptop computer which also recorded facial expressions using a webcam. The users were given a number of tasks to be performed.

Usability Tasks

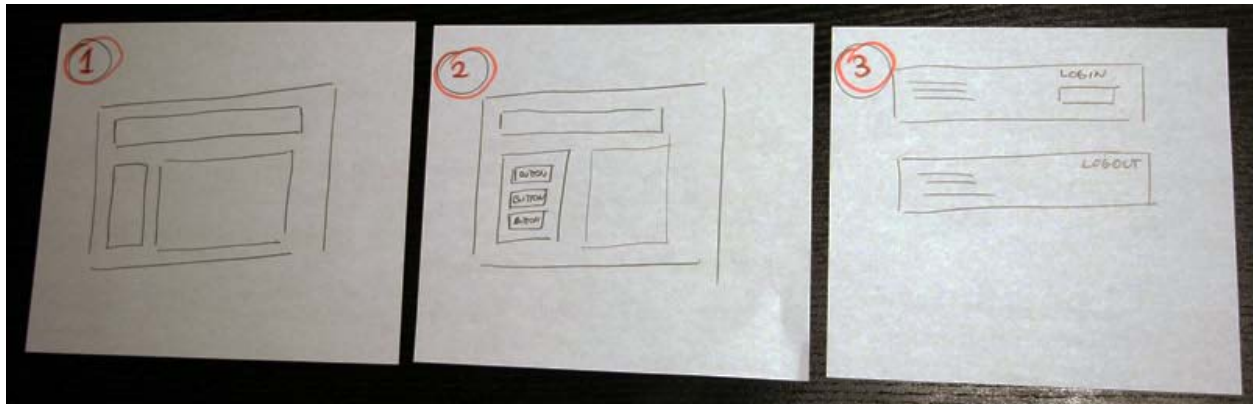
Participants were told the following introductory scenario:

Background Script: *A friend of yours has recommended a new prototyping tool and you've decided to give it a try on a small project. It's a web based product and so you've very quickly gained access to it without having to read any tutorials or by passing installation. You managed to catch a glimpse of the tagline: fluidIA – agile UI prototyping.*

The following tasks were asked each participant:

1. You would like to draw a quick sketch of a wireframe for a new client web site. Here is what you have in mind ... [image: 1].
2. Now you're thinking ... the boxes look nice... but if you don't label them you might not remember what they mean in a week from now. Label: "header", "main content", and "sidebar".
3. Widen the sidebar more towards the right, and shorten the leftmost side of the main content area.
4. Populate the sidebar with little boxes [image: 2]
5. A developer runs in and screams to set the header to precisely a width of 800 pixels.
6. Duplicate the sidebar object onto two new pages.
7. Rename the second page to "Second Page"
8. Create two states for the header [image: 3].
9. Shift the whole second state a little downwards and the first state upwards.
10. Make sure both states are now positioned in the same pixel perfect precise way.
11. On page two you would like to make an exception and have the sidebar 20 pixels wider than on pages 1 and 3.
12. Please increase the importance of the header on page one.
13. Please delete the main content area and the last page.
14. Please create a new concept for the header.
15. Please add three checkboxes to the header.

The image samples refer to the following:



Results – Completion Analysis

The following results for each task, for each user were recorded. Passed meant the task was performed in less than 1 minute. Difficulty meant the task took between 1 and 3 minutes, or required help or hinting. Failed meant that the user did not fulfill the task properly or gave up. On two occasions in the second test, as a result of time constraints two tasks were not evaluated and resulted with a marking of “N/A”.

	Test 1	Test 2	Test 3	Test 4
Task 1: Drawing	Passed	Passed	Passed	Passed
Task 2: Labeling	Passed	Passed	Passed	Passed
Task 3: Resize	Passed	Passed	Passed	Passed
Task 4: Populating Boxes	Passed	Difficulty	Passed	Passed
Task 5: Precise Width	Passed	Passed	Passed	Passed
Task 6: Duplicating Sidebar + Creating pages	Passed	Passed	Passed	Difficulty
Task 7: Renaming Pages	Passed	Passed	Passed	Passed
Task 8: Creating States	Passed	Difficulty	Passed	Passed
Task 9: Repositioning	Passed	Passed	Passed	Passed
Task 10: Repositioning two states	Passed	Passed	Passed	Passed
Task 11: Making instance exceptions	Passed	Passed	Difficulty	Difficulty
Task 12: Setting Priority	Passed	N/A	Difficulty	Difficulty
Task 13: Deleting	Difficulty	Passed	Passed	Passed
Task 14: Creating a new idea	Difficulty	Passed	Passed	Difficulty
Task 15: Creating form elements	Passed	N/A	Passed	Passed

Results - Qualitative Observations

Test 1

- TECH BUG: Drawing and releasing the mouse close to the footer text causes the drawn element from not completing.

- The user was at first not certain how items became automatically grouped. However with closer examination of the parent and “drawing inside” cues that learning curve has been successfully passed and the remark “which is kind of nice” has been noted.
- In relationship to the styled lines in a text object, the user “really liked the lines” as it differentiates the object type.
- After drawing the text field, the user began typing automatically without an effect, expecting the text to be recorded. The user then double clicked the object and was able to type into the contents.
- The “backspace” key was pressed in order to delete an object, and it unexpectedly moved the browser back one page with everything being lost. Later on, the “delete” key was used instead.
- FEATURE REQUEST: It would be nice to be able to resize multiple selected elements.
- When pasting an object into itself, it took the user a while to understand why nothing happened and it was not pasting. Interpretation: there is no feedback that it is not possible to paste an object into itself (which would cause a continuous loop).
- When pasting it is also not too clear where the element will be pasted into.
- “Not sure where it’s inheriting from” was a comment made in relationship to the master and instance relationship. Having three object instances, the user thought that there is one particular element on the stage which it is inheriting from, without grasping that all of the objects on the stage can be transformed and affect the master.
- The user thought that “it is very helpful to make elements different shades”. However the connection between tone and priority is a bit forced. Tone could be also used to emphasize and not necessarily prioritize.
- VISUAL BUG: “HOLD Z” image should be transparent around corners.
- The “All Instance” controller’s visual feedback of higher opacity for modified instances has not been perceived to stand out enough.
- The user tried to copy a full page, without success as it is not possible (yet).
- In order to create a new idea, the user created a new page and pasted the element into the new page and would edit the new element as an instance (as opposed to creating a new idea).
- FEATURE REQUEST: would be nice to try different ideas for multiple objects at the same time at a page level.
- The user eventually understood the difference between states and ideas.
- FEATURE REQUEST: grid implementation to allow for easier snapping or aligning of objects.
- FEATURE REQUEST: would really be nice to have multiple people to collaborate together on the same wireframe remotely (in the same time).
- FEATURE REQUEST: importing images would be good for importing sketches.

Test 2

- FEATURE REQUEST: The user expressed a need for seeing the X, Y coordinates during resizing and dragging possibly by means of a grid.
- At first the user was not sure about the rules for having the footer bar appear or disappear. It was not understood that an object has to be selected for the footer to appear.

- In the beginning, the user did not understand the nesting behavior of objects, as an item was drawn over the left navigation, with the main content area on the right being selected. Later on after using the program for a while, the nesting feature was learned.
- User tried to duplicate a box object using CTRL+D.
- User was confused when multiple items were selected, and only one item had the additional text “selected” over it.
- BUG: Items were selected from various separate objects and copied/pasted over, with only some being actually pasted.
- When two instances exist which are inheriting position from a master, it was confusing for the user that both were being moved around after moving one.
- In order to delete an object, user tried right clicking on the item.
- User tried to undo with Ctrl+Z without any result.
- BUG: the user managed to paste an object into itself across pages, causing an infinite loop and crash.
- After drawing a text field, the user started typing automatically without effect. The expectation was that the act of typing would transform the lines into actual text.
- When multiple states were asked to be drawn, the user created two separate pages in which the different states were represented.
- FEATURE REQUEST: There should be a footer bar for a selected text element.
- The user was confused about switching states, due to the high visibility of the “starting state” radio buttons.
- User thought that he was only able to create 5 states (due to the proximity of the priority control in the footer).
- FEATURE REQUEST: Would be nice if multiple states would be more visible in the workspace.
- User thought that “Edit All” would make relative (and not absolute) adjustments to the various states.
- User thought that clicking “Master” in the footer would actually change the attributes of the object being displayed. Did not understand that it is just an edit mode.
- When asked to create a new idea, the user initially thought of using states.
- User commented that when switching between pages, the actual selected state or the number of possible states is not visible in the workspace.
- FEATURE REQUEST: The user was curious how numerous created ideas would be presented or made visible to the client. Typically that would be done using multiple pages: (“Page 1 – Concept1”, “Page1 – Concept2”).

Test 3

- FEATURE REQUEST: User expressed that as an item is dragged or resized, it would be nice to see the stats in proximity to the element.
- At first glance, the user has misunderstood “priority” to be a way of layering elements over each other.
- The user has very quickly grasped the nesting behavior.

- The user has right clicked on an item with the intention of deleting it, but did not understand the remaining items inside of the right click menu.
- The user has double clicked on the object with the intention to edit the label.
- When resizing, the user selected two objects together with the intention of resizing both. However only one was resized.
- User perceived the “master” and “instance” buttons as two separate modes, however he was confused that a new object was pasted as an instance, yet when selected it clicked on it was in master edit mode.
- At first the user was not certain how the parent child relationship was created, but very quickly understood that these are set by “drawing inside” of elements.
- At first, the user was a bit uncertain how to modify the relationship between masters and instances or break them apart.
- The user tried pasting an object into itself but did not receive any feedback that it was not possible.
- Misunderstood that if an item is pasted as a new master, the relationship will be separated.
- User expressed verbally that any object should be editable as instance by default, while requiring effort to edit as master to protect from editing other elements mistakenly.
- BUG: instance contents were not copied during a paste.
- The user did not understand that the “instance” mode was an “edit mode” but instead perceived it as an attribute controller. Recommended to rename to “edit as”
- User began typing right away after drawing a text element, with that interaction not working as expected..
- BUG: When creating new states, form elements do not copy over properly.
- User expected to rename the state by just clicking on top of the name.
- User sees the advantage of setting visual tone, but not necessarily for priority.
- The user wasn’t too certain if ideas live on the page or on objects.
- The user has attempted to drag select items in a particular area.
- When editing the master’s label, the instance label has also been modified which confused the user as he expected it not to change.

Test 4

- When renaming pages, when selecting the text to be edited with a mouse, the edit mode is lost very easily.
- BUG: During drawing, when the user releases over the footer text, it causes an error.
- The user looks for the delete button on the interface, and then right clicks. Finally uses the delete key. “I think of a right click as an action.”
- Has perceived ideas as the contents of an object.
- User wonders how to specify the canvas size or screen resolution for fixed width concepts.
- Understands the parent child relationship pretty quickly.
- At first, the user thought that text can be specified directly inside a standard object (not text object). Very quickly it was learned that the text tool fulfills that function.

- Liked the lined text.
- Liked the labels and them disappearing when filled with contents.
- When pasting text into an object, the user didn't seem 100% certain that the text objects were pasted.
- Searched for text formatting controls and pressed CTRL+U with the expectation of underlining text.
- User intended to group the text items.
- FEATURE REQUEST: "It would be cool if the sub objects could scale down when resizing the parent object".
- User grabs the resize handle from the right hand side as that's where the resize cue is. Was surprised that the resize functionality is also possible from any side.
- Intended to select all and resize all text elements at the same time.
- Understood that pasting as new instance will inherit what has been done on the other page.
- "Love it. Love it. Object-level master".
- The user was confused when an object was pasted as an instance, and then after selecting it, the master edit mode was highlighted.
- The user wonders "How do I break the connection between master and instance".
- Checkboxes are perceived as potential down arrows.
- The user misunderstood the pasting modes as "master" or "instance". Thought that when pasting as "new master" it would inherit properties from the master.
- Perceived the priority as a Z-level controller.
- In the state controller the user mistakenly clicked on the radio buttons (and not the state buttons) with the intention of switching states.
- The user expressed an opinion that tone would not necessarily used for just priority, but just to emphasize certain elements.
- FEATURE REQUEST: The user would like to be able to generate an HTML prototype that could be shared as a link.

Concluding Summary

The biggest findings in the second testing cycle included the following:

- State controller. Users are mistakenly led to believe that the small radio buttons, and not the larger rounded boxes, are used to change states. Radio buttons appear more dominant on a dark background and therefore are the first thing which is clicked when intending to change states.
- Deleting. Although the delete key is often found when intending to delete an item, this action has been numerously found to be preceded by right clicking or pressing the backspace key. The right click is expected to bring up an action menu where a delete command might be found.
- Auto nesting. The ability to establish parent and child relationship definitely requires learning and has been learned successfully in all tests. Although users learn the nesting feature pretty quickly it is still a new convention. Some users still make mistakes in the very few minutes of using the tool.

- Text edits. Users have been found to draw a text field and begin typing right away with the expectation that the text will be recorded. Currently the interaction requires double clicking first.
- Grid or Canvas Size. Numerous users requested either a grid or some ability of easing the alignment of objects to each other.
- Priority. Although users perceive the quick way of setting tone variations to objects with the help of key presses (1-5), they do not necessarily feel that priority has to be associated with tone. More so, at least twice, the priority control has been mistakenly believed to be a layering controller that sets the Z-level of objects.
- Master Instance. Users think this the two master / instance buttons are a toggle which would affect the object's display inheritance properties in the workspace. However, it is still difficult for users to grasp that the two buttons are only edit modes which affect the upcoming edit action. Users also continue to wonder how to affect the instance inheritance or "break the relationships" with the master. It would seem that the side buttons are too far away from the inheritance checkboxes. More so, the inheritance checkboxes have once been potentially perceived as a down arrow. The master and instance controller buttons are also distant from the inheritance controller which also cognitively disconnects them. In this test cycle, 2 users still were able to make instance exceptions, and 2 achieved it with difficulty, which leads to believe that there is considerable improvement from the first cycle.
- Pasting. A lack of feedback has been observed when an object is to be pasted into itself. FluidIA currently prohibits this to protect the workspace from looping, but does not provide any indication for this. At least one user also mistakenly believed that inside of the paste menu, the "new master" paste mode would create an instance suggesting a stronger need for differentiating the two paste modes.
- At least three users said they really liked the line text feature which allowed them to quickly represent low fidelity text.
- At least two users requested the ability to resize multiple selected objects at the same time.
- Ideas. Although users were able to create new ideas for objects, their model of thought remains closely connected with presenting ideas at the page level. At least twice, when asked to create new ideas, they have created a new page in which they would paste new instances. This is possibly related to the concern of making ideas more visible, which the creation of pages allows for.