

Heuristic Evaluation of Covalence

1. Problem

Covalence is a concept-mapping tool that links images, text, and ideas to help users understand and share content in a visual diagram..

2. Violations Found

[H2-1 Visibility of Status] (Severity 3)

When saving a map, the only user-feedback is a “saved!” message. I did not name my map, so what was it saved as? Provide a popup “create map” form when users click the “create” tab, or when they press the save button.

[H2-1: Visibility of Status] (Severity 2)

After creating the “CS147” node, a second tap on the node creates a double outline but nothing else seems to have changed; it is thus unclear what double-tapping does. Try a pop up with brief explanation the first time around so the user knows what this means (or highlighting an affected area in a different color, etc). Following this, perhaps make the “add node” button grayed out such that a user will know they can’t click it before clicking the node they just made/the node they want to extend another node from or connect with.

[H2-2: Match Between System & Real World] (Severity 1)

There is a rather unfortunate coincidence in that the universal “sharing” icon (connected nodes) also looks just like the nodes+lines that you are using for your atom model. What other icons can you use? For example, in ios the share button is an open rectangle with an arrow pointing upwards, whereas the node button you are currently using is typically used in android. Since this is an app for iPads, you should probably use the former.

[H2-2: Match Sys & World] (Severity 1)

Flip animation is kind of distracting when you hit “+” for the first time in the editor. What purpose does it serve? If you’re trying to create some parallel with how you can flip a piece of paper around in real life, I think it’s unnecessary because people also have distinct mental models associated with digital interfaces.

[H2-3: User Control] (Severity 2)

If I click the “Home” icon while I’m viewing a specific map under under the “Explore maps” page, how do I go back to that specific map right away? I see the main “Explore maps” page again. Furthermore, if you want to change this up so that the “Explore maps” tab stays at a specific map after navigating away, then you need something in your specific-map interface to let the user navigate from a specific map back to the main “Explore maps” page. In general, provide a button/some way for a user to return just one step back from the current screen.

[H2-3: User Control] (Severity 3)

How do you edit an existing map? The editor only allows you to create new maps - I don’t see any edit button when I’m viewing a finished map - this seems like an an important oversight especially since

editing/creating maps is one of your main tasks. There should at least be an edit button somewhere in your prototype to represent this.

[H2-3: User Control] (Severity 3)

There needs to be a save button when you view other people's maps, too. How do you import/save a public map into your local storage so that you can edit it, or see it later? (I see a "saved maps" section in the "Home" section, but there's no corresponding save button when you look at a specific map under the "Explore maps" section)

[H2-3: User Control] (Severity 2)

When viewing a specific map, the title of the map replaces the search bar in your main navigation bar. I would prefer to see the search bar there. Suppose I get inspired while browsing a map and want to search for something related. It would be great if I could do that right away, without needing to navigate to another screen first, where the search bar is visible.

[H2-3: User Control] (Severity 2)

It would be nice if you can give the user a way to move nodes around on the graph (even if layout is going to be automated by using some kind of force-directed layout function), and scale nodes. I notice you have scaled nodes in your example map, but there is no scaling option in the editor. Generally, I think users will want this creative freedom.

[H2-3: User Control & Freedom] (Severity 1)

When viewing another user's map, there is currently no way to view that creator's "profile", or just other maps that they've made. Add an interaction to the top blue bar that lists the map name and creator name, and allow for viewing the creator's other work.

[H2-4: Consistency and standards] (Severity 1)

The "Explore" button (a compass?) is not immediately intuitive as users generally do not encounter a specific button for exploring an interface. They are generally presented with an automatic way to explore such as a newsfeed. Consider building on an existing pattern such as this. The icon made sense after I realized what it did, but it was not obvious just from looking at it that the compass stood for exploration. It made me think of Safari.

[H2-4: Consistency] (Severity 1)

Text consistency - Under the "explore maps screen" the search bar says "Search for maps about...", while under the home screen the search bar says "Search your maps...". I could argue that the instruction "Search for maps about..." does not exclude searching your local maps. If it's only supposed to search other people's maps, then this should be made clearer. Suggested change: "Search public maps..."

[H2-4: Consistency] (Severity 1)

On the "share map" popup screen, the "can edit" option looks like a button, though we assume it's a dropdown or slider. It seems unnecessary to include as most applications that involve sending a message are automatically editable, unless the "editing" refers to the fact that a user can edit the message after delivering. This button is a bit misleading. Suggestions are to delete it, or present user with the option of editing after they've already submitted a message, not during. Replace it with a visible checkmark/X or binary slider to let users know it is not a button.

[H2-6: Recognition Not Recall] (Severity 1)

On the "Explore maps" page - why not organize maps using your atom model? You already organize the home screen this way. Consistency!

[H2-7: Efficiency of Use] (Severity 3)

Two taps to add a node (first tap “+” and then tap the node type) seems like too many. Why not let the user single-tap on blank space to create a node, and give it a default type? This would make it one tap to create a node.

[H2-7: Efficiency of Use] (Severity 1)

Show a list of “recently viewed maps.” Could be useful to go back to something you’ve seen before quickly. This can be implemented, for example, as a drop-down list of suggestions from the search bar.

[H2-7: Efficiency of Use] (Severity 1)

Show a list of “recent searches.” Would be very useful if you remember you saw something in a previous search and want to look for it again. This can be implemented, for example, as a drop-down list of suggestions from the search bar.

[H2-8: Minimalist Design] (Severity 1)

Aesthetic - white bubbles on a white background doesn’t really stand out. Using different colors might give users a better “first read” of what your app does. Consider changing the background to a light color, or changing the bubble background to a light color.

[H2-8: Minimalist Design] (Severity 1)

Stick to flat design, if you want to do flat design. In the category squares under “Explore maps”, eliminate the drop shadows, or at least make them a lot more subtle.

[H2-8: Minimalist Design] (Severity 1)

If you won’t show your app name in the main navigation bar to save space, it would be good to at least have a splash screen. Personally, I think it would be great to have it in the navigation bar, because that will help with brand awareness. Let’s say someone sees a friend using the app, and they want to know what it’s called. Seeing that logo in the navigation bar will answer this question right away.

[H2-10: Documentation] (Severity 2)

Help - how does the user provide detailed notes for a bubble/node? This just “happens” in your prototype and there’s no suggested interface for text entry.

[H2-10: Documentation] (Severity 1)

On your “home” screen what does the “home” bubble do when you tap on it, since you’re already home? This is not implemented and the intended behavior is not obvious. If nothing, then how do you distinguish between bubbles/buttons that actually do something and those that are no-op? Right now the home node looks just like the “Your maps” and “Saved maps” node, which are clearly actionable items.

[H2-10: Documentation] (Severity 4)

The sharing screen should indicate how it will work. What if the person you want to share a map with doesn’t have the app (which is a high probability, since you’re sharing via email)? Do you send them a PNG? Do you ask them to download the app? If they have the app, does the map get saved to their account with or without their permission? The screen should inform the user how it works, since that may affect whether or not they want to share something, or whether they’ll have to tell the sharee to do something in order to access the content, etc.

[H2-4. Consistency and standards] (Severity 2)

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When creating a new map, the tools for doing so are placed at the bottom right corner, which is the area of the screen a user is least likely to look at. Therefore, there might be a slower learning curve while the user is trying to figure what to do first. To fix, try moving these to the top section, usually associated with a navigation bar, or the top left section, which is the space a user's eye will generally travel to first.

[H2-1. Visibility of system status] (Severity 2)

Clicking on the start to highlight/favorite a map doesn't appear to change anything e.g. the numbers of like do not change. Easy fix: update number count.

3. Summary of Violations

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
[H2-1: Visibility of Status]			2	1		3
[H2-2: Match Sys & World]		2				2
[H2-3: User Control]		1	3	2		6
[H2-4: Consistency]		3	1			4
[H2-5: Error Prevention]						0
[H2-6: Recognition not Recall]		1				1
[H2-7: Efficiency of Use]		2		1		3
[H2-8: Minimalist Design]		3				3
[H2-9: Help Users with Errors]						0
[H2-10: Documentation]		1	1		1	3
Total Violations by Severity	0	13	7	4	1	25

4. Evaluation Statistics

Severity / Evaluator	Evaluator A	Evaluator B	Evaluator C
sev. 0	100%	100%	100%
sev. 1	31%	69%	53%
sev. 2	43	33%	42%
sev. 3	50%	75%	100%
sev. 4	100%	100%	100%
total (sev. 3 & 4)	40%	80%	100%
total (all severity levels)	36%	68%	60%

5. Summary Recommendations

Awesome improvements from your low-fi prototype in making the content more robust and interactive (e.g. allowing a node to be magnified) and highlighting the social aspect of learning!

Overall, we love how integrated the prototype is; it has a very clean aesthetic that makes the user feel at ease and has great potential for ease of use. That said, the big thing to work on is simply to think a bit more on how to make the creation of a map, which is core to your app, easier and more intuitive to do. From changes in the visible interfaces (like the “add node” button placements) to more systematic user interactions (first make the node, add node information, selected old node to be connected with new node, create new node, etc), there could be some smoothing out to do. In general, especially for such a tactile application, it’s important to think about existing (somewhat universal) gestures and how to leverage them (e.g. users might expect that double-tapping would allow them to edit a node instead of selecting it, as the prototype currently does). You can also predict what the user wants to do and do it, instead of waiting for user to inform you what they want. On the home screen, you could display a shortcut to the last edited map. On the explore screen you can display a shortcut to recent searches. So on and so forth.

Ultimately, we think that ease of use will matter more than anything else. Even if you have a great feature set, if it’s too hard to work with, customers will look for other options. If we recall correctly, you made this exact comment with regard to prototyping tools - you started with proto.io, but decided it had a high learning curve, so you switched to Marvel.

Good luck!

Selina, Ben-Han, and Gio :)

Severity Ratings

- 0 - don’t agree that this is a usability problem
- 1 - cosmetic problem
- 2 - minor usability problem
- 3 - major usability problem; important to fix
- 4 - usability catastrophe; imperative to fix

Heuristics

[H2-1: Visibility of System Status]

- keep users informed about what is going on

[H2-2: Match Between System & Real World]

- speak the users' language
- follow real world conventions

[H2-3: User Control & Freedom]

- “exits” for mistaken choices, undo, redo
- don't force down fixed paths

[H2-4: Consistency & Standards]

[H2-5: Error Prevention]

[H2-6: Recognition Rather Than Recall]

- make objects, actions, options, & directions visible or easily retrievable

[H2-7: Flexibility & Efficiency of Use]

- accelerators for experts (e.g., gestures, kb shortcuts)
- allow users to tailor frequent actions (e.g., macros)

[H2-8: Aesthetic & Minimalist Design]

- no irrelevant information in dialogues

[H2-9: Help Users Recognize, Diagnose, & Recover from Errors]

- error messages in plain language
- precisely indicate the problem
- constructively suggest a solution

[H2-10: Help & Documentation]

- easy to search
- focused on the user's task
- list concrete steps to carry out
- not too large