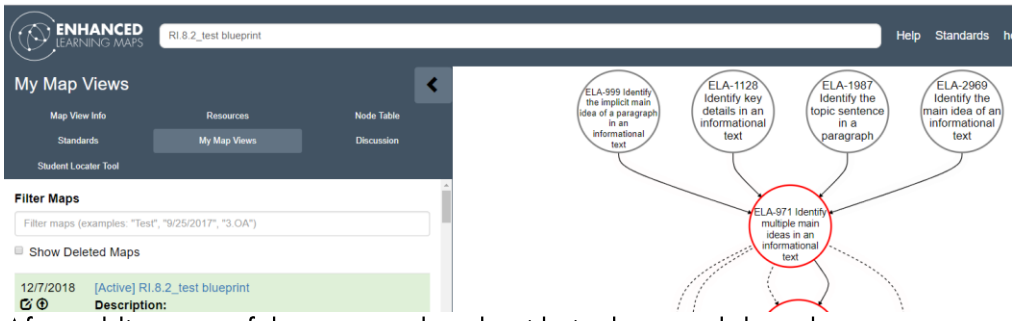
1. **Heuristic Evaluation (HE)** - Conduct a HE to narrow down what some of the possible problems with the app/website are. The HE you conduct should illustrate how you have applied each of the ten principles of the evaluation to your chosen app/website. At the end of your HE please conclude it with a list of the problems that your HE highlighted.

Area of focus: Enhanced Learning Maps software, maps, and resources. elmaps.us

1. Visibility of system status

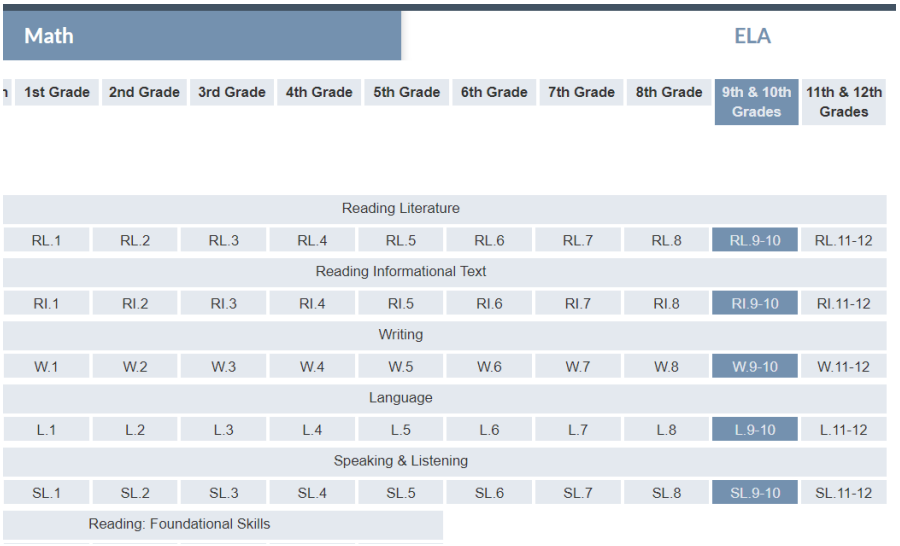
When manipulating maps, there are steps that need to be taken to add nodes and to ensure any changes made are saved. The only indication that a "next step" is needed once a map has been changed is an asterisk appears next to the title of the map. I think this could be improved, but I do remember having very long conversations about how best to handle it and not make the UI cluttered or make the process cumbersome. We didn't come up with anything then. Additionally, in order to save a changed map, a user has to access a totally separate menu AND they can save in 2 different places. I don't find that intuitive.

i. This is what a user sees when they open a saved map. The title of the map is displayed in the search bar. The map is set up for changes with the gray nodes.



ii. After adding one of the gray nodes, the title in the search bar changes.

Users do know which content area they are working in and which standards they are viewing through the visual representation of color changes on tabs and tiles.



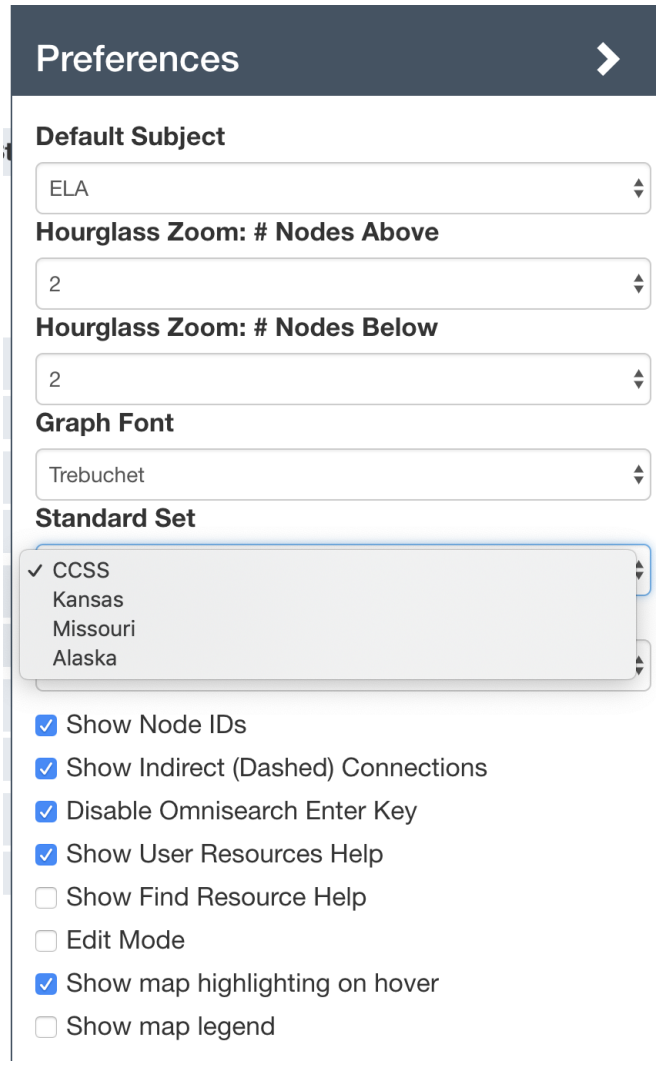
ELA tab is white indicating that content area is chosen. Tiles in the standards grid are grey, indicating those are chosen. However, now that I am REALLY looking at this, it seems to be an inconsistent way to indicate selection. Seems like the content area chosen should be flipped to better match the selection visual in the tile grid.

2. Match between system and real world

The software does a fairly good job managing this aspect.

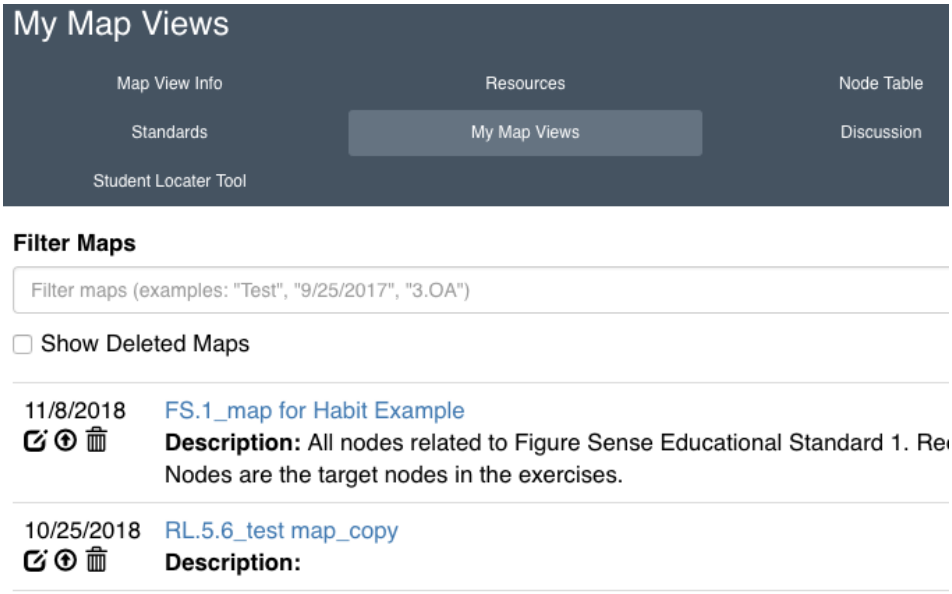
The software does a good job of ensuring that there is a consistent language used for educators. This became challenging though when the states in our research group chose to move away from the common core state standards. As a result, there is a process for choosing a state specific set of standards or choosing the common core standards. Additionally, all the resources and maps are relabeled or altered based on the standard set chosen by the user. A user selects the state under the Standard Set dropdown menu. As a rule, all new users are placed into the default Common Core State Standards.

i.



Common icons are used throughout the software to indicate editing and document upload options. In addition, the software utilizes the project graphic to indicate ELM "endorsed" maps and materials.

a. 



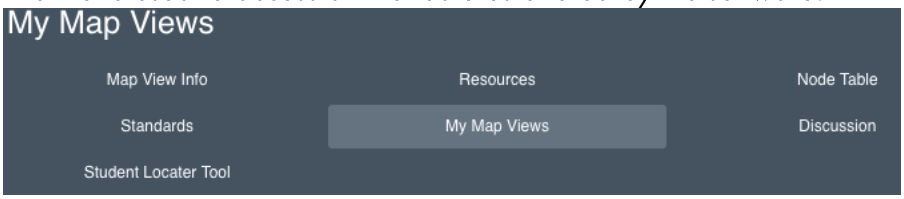
The trash can, upload, and edit buttons are typical icons used to represent these functions.

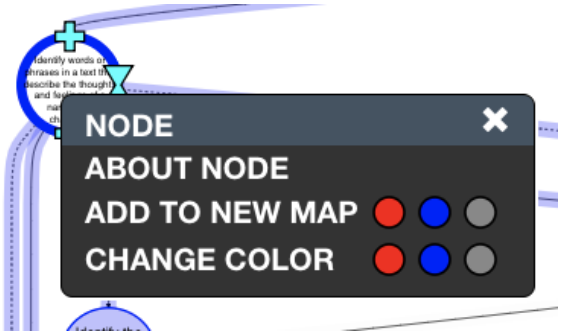
A large plus symbol, that is also clickable, is used on the nodes to indicate that there are more nodes to view. I am not sure how intuitive that is for a user who has not been through a training or who has not looked at the user guide.

The hourglass is likely not so clear, but we discourage users from clicking it because the process to use it is VERY overwhelming.

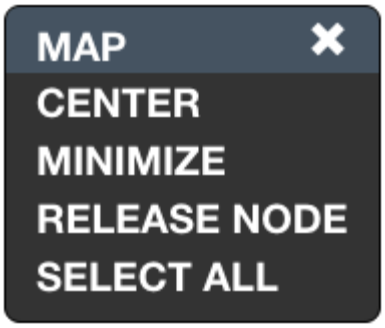
Labeling of menu choices has been simplified and made to connect better with the action the user would expect to happen when the menu is chosen.

The menu used to access all the features offered by the software.

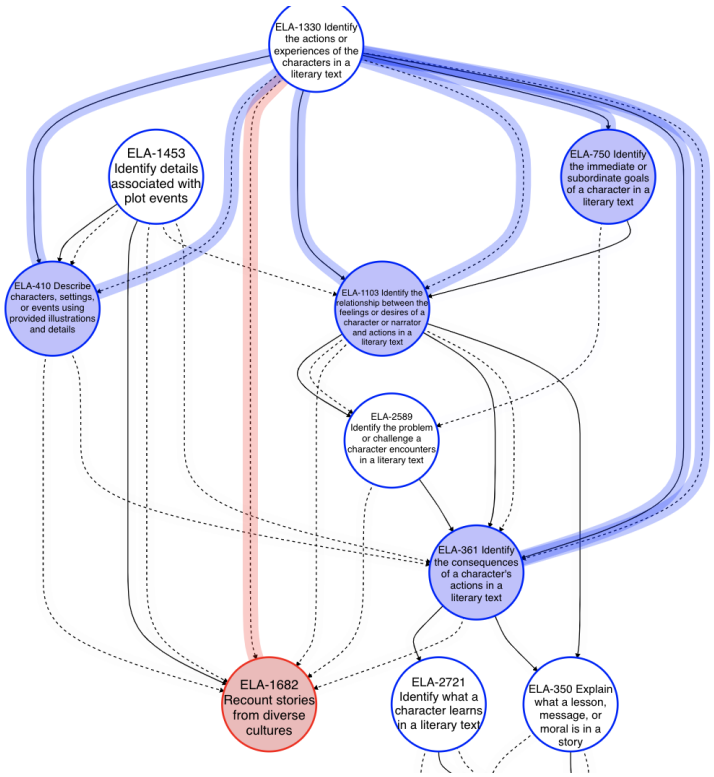




A negative about this menu is that it covers up the other functions of the node. A user would need to close the menu to click the bottom + symbol or very delicately click on it.



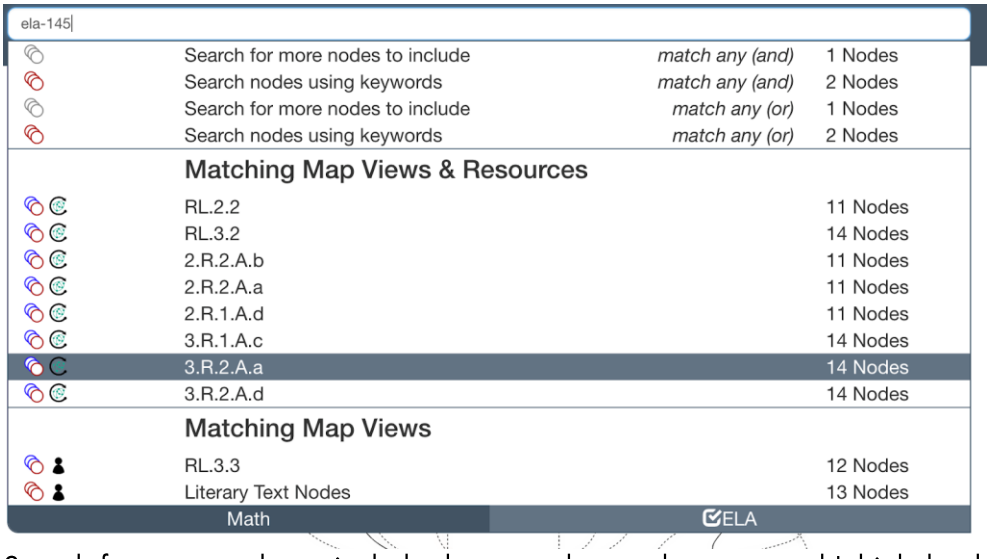
Another labeling feature is the highlighted connection lines. This makes the ways in which the nodes are linked easier to visualize.



2. User control and freedom

The idea that a user can disrupt an action and safely return to it is very limited in the software. They can click the back button on the browser to return to the previous screen, but that is not a function that is offered by the software.
The major component of the software are the maps. Once a user has opened a map, they can perform many actions with it and to it. However, those actions are not clearly spelled out. This means that the software is definitely geared toward expert users (my colleagues call them super users). The options for actions available unfold the more a user digs in to the maps.

Some of the options that a user can select will maintain the displayed map, while others will essentially remove the map. There is no indication which one will do this until AFTER the option is chosen. A great example is an option from the omni search. This is an example of what happens when a user searches for a node.



Search for more nodes to include does not change the map, and I think that label is fairly clear. Search for nodes using keywords will completely replace the displayed map with the nodes from the search. The rest of the search yields will also completely replace the displayed map. If a user has been working on making a map and hasn't saved, the work will be lost (unless they use the back button on the browser). This could have great repercussions for users.

Users are never restricted from choosing different actions in varying order.

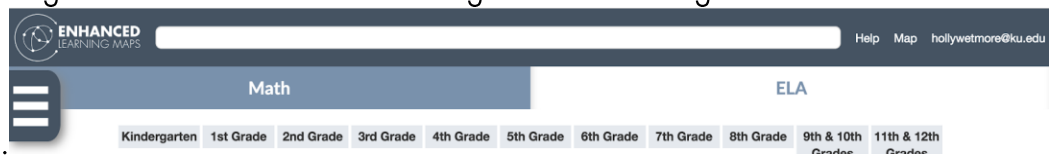
The biggest violation of this aspect of the evaluation is the fact that the software allows users to have absolute control over the actions chosen, but no support is offered to understand the implications of those choices or ways in which to undo them.

4. Consistency of standards

There is a search bar. It is referred to as an omni search and is not terminology I think our intended audience knows. Additionally, the search bar is just a long white box in the header. While this is a location normally used for searches, it is unclear that it is a search bar because it does not employ the common icon for searching - the magnifying glass. In addition to searching, the omni search bar also acts as a place to display the title for the current view. This is inconsistent with what users typically assume search bars do. The search bar is also unnecessarily long.

The standards table used to initially navigate to the learning map model, does employ consistency. A user can set the table to display state specific standards, which is controlled by the user from the Preferences tab. This ensures that a consistent language exists for the user.

The features menu is in the upper left corner of the screen. This is inconsistent with the normal locations for drop down menus or tabs. It would make sense to shorten the search bar and add a drop down next to Help that says Features (or something like that). The features menu does employ the now common "hamburger" style for a menu of tabs. However, I don't feel our targeted user on a broad scale recognizes a "hamburger" menu.

i. 

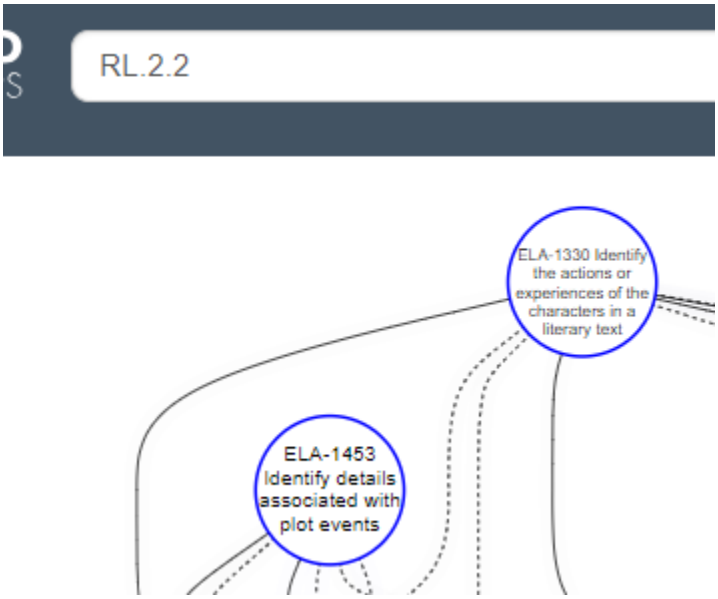
5. Error prevention

There is no error prevention in place that would make a user aware they were going to navigate away from an altered map. A user's work would be lost. This is particularly frustrating since the effort it takes to alter a map is a non-linear process and can be difficult to recreate.

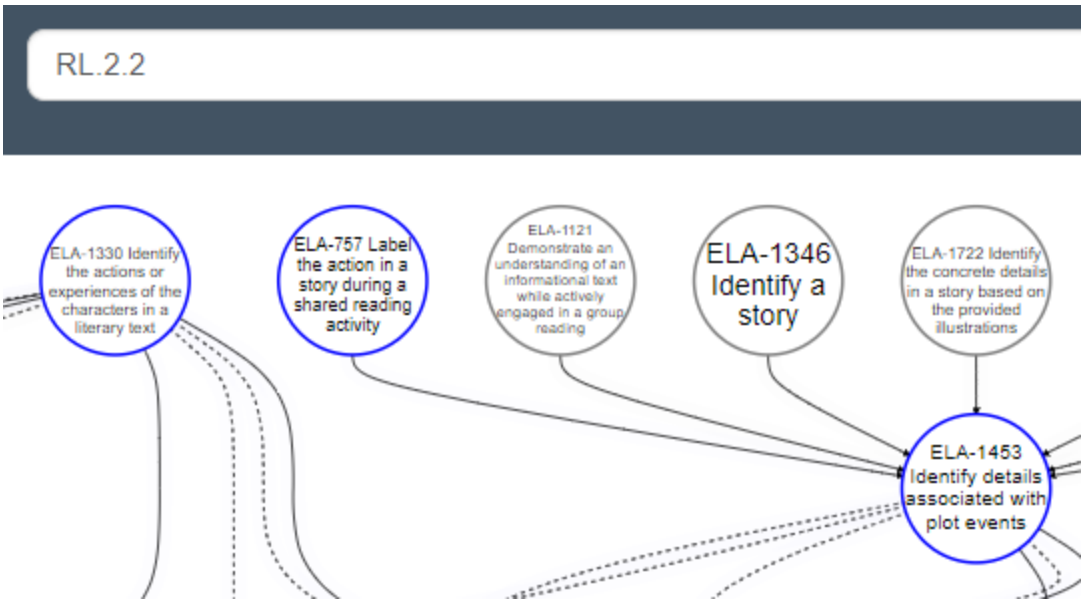
The following images show areas where there are inconsistent labels associated with unsaved maps.

CREATING A NEW MAP FROM SCRATCH - WHAT IS DISPLAYED IN THE "Search Bar"

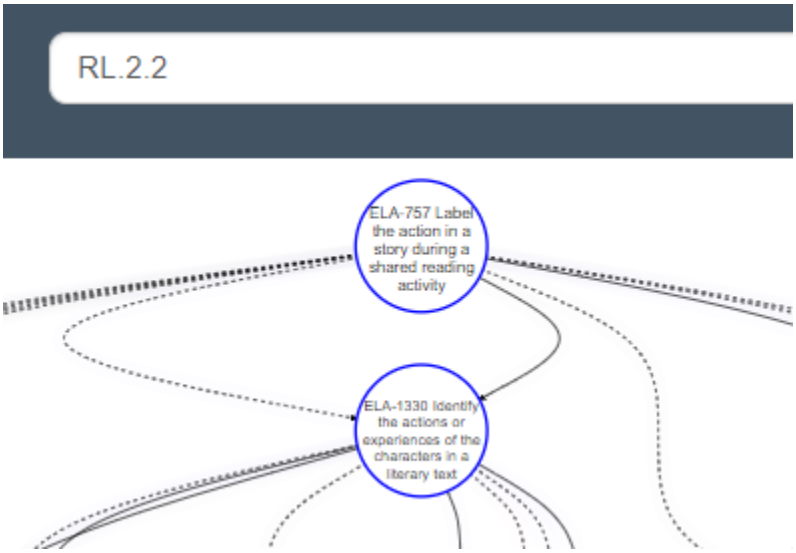
OPENED AN ELM MAP VIEW AND ADDED A NODE – WHAT IS DISPLAYED IN THE SEARCH BAR:



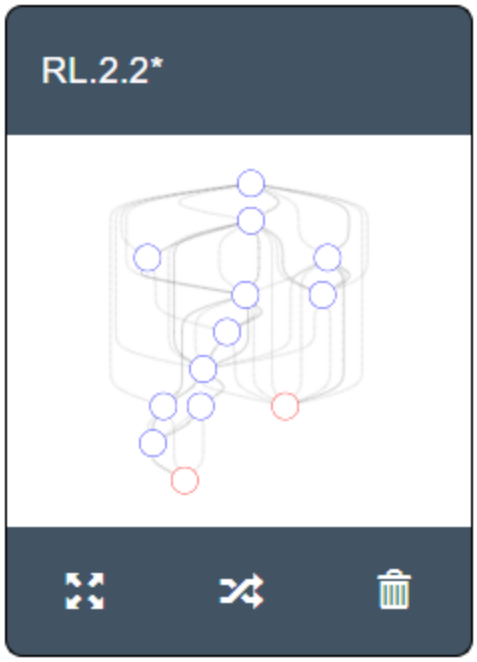
ADDING ELA-757



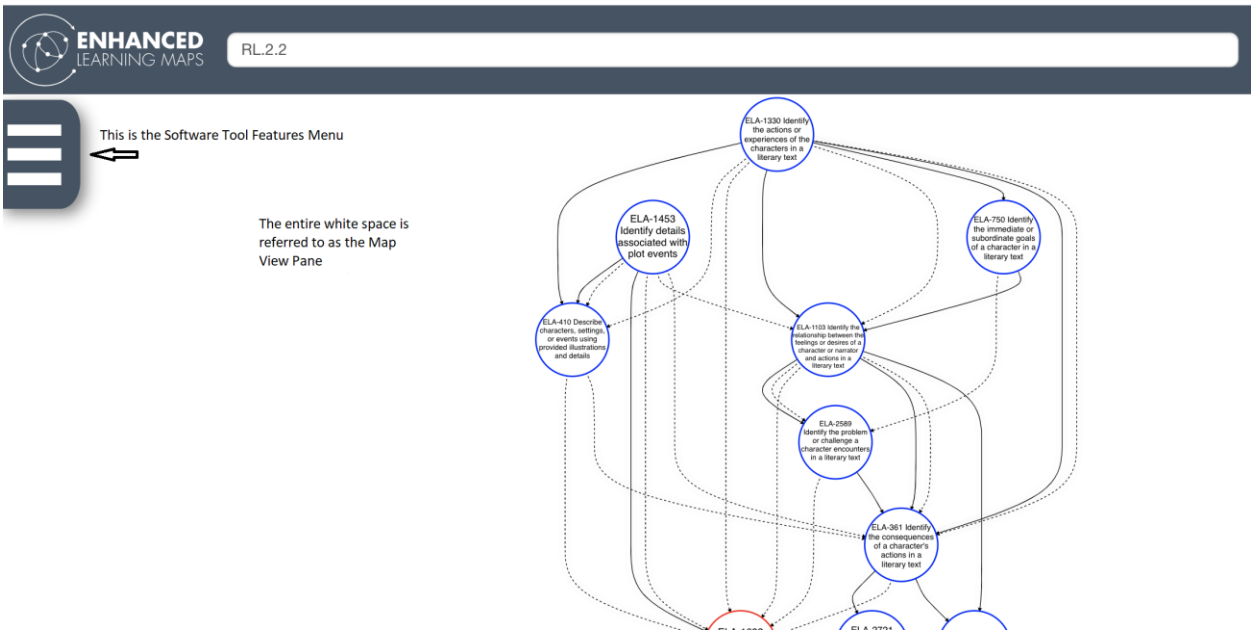
THE MAP HAS BEEN CHANGED AND NOT SAVED – SEARCH BAR INDICATOR REMAINS UNCHANGED



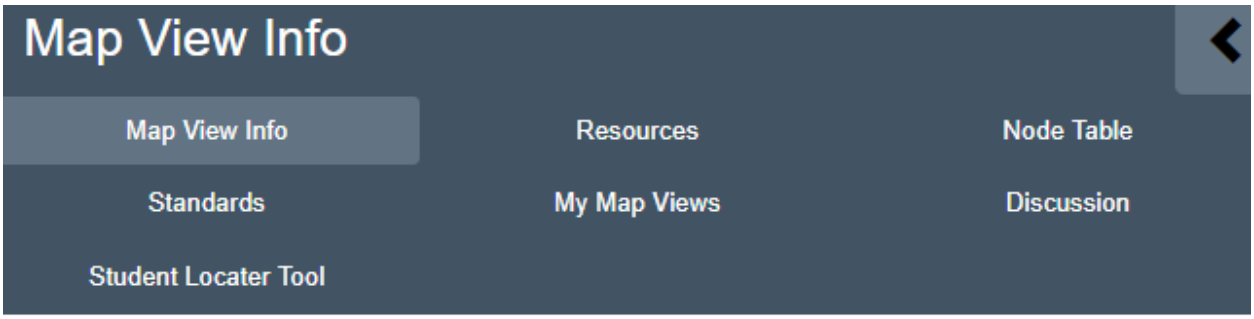
A SEPARATE ACTION THAT CAN OCCUR WITH THE MAP IS TO MINIMIZE IT, THUS CREATING A BLANK MAP VIEW PANE TO WORK ON ANOTHER MAP AT THE SAME TIME. MINIMIZING THE CHANGED, UNSAVED MAP PRODUCES AN INDICATOR FOR UNSAVED WORK.



The following images show areas where there are methods to save maps.



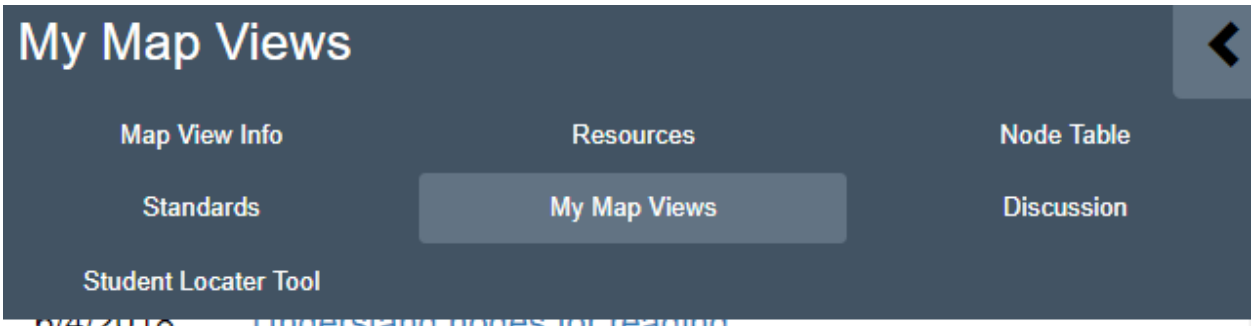
THIS IS THE SOFTWARE TOOL FEATURES MENU THAT CONTAINS TABS USERS ACCESS TO SAVE MAPS. TWO TABS ARE USED.



Save Map

Click below to save a copy of the current map view.

Save Copy of Current Map



6/4/2018 Understand nodes for reading

Description: Contains all nodes that use understand for RI and RL. Understand will become some form of explain.

6/4/2018 Understand nodes for Language

Description: Contains all nodes that are related to the Language standards.

6/4/2018 Story Nodes

Description: Map contains all nodes flagged for editing due to the use of "story" and not "literary text".

6/4/2018 FS_Define the issue or problem

Description: contains all nodes tied to EduStd 3-Define the Issue or Problem

6/4/2018 FS.6_Persuasively present results

Description: This map contains all nodes for Figure Sense Educational Standard 6.

Save Map

Click below to save a copy of the current map view.

Save Copy of Current Map

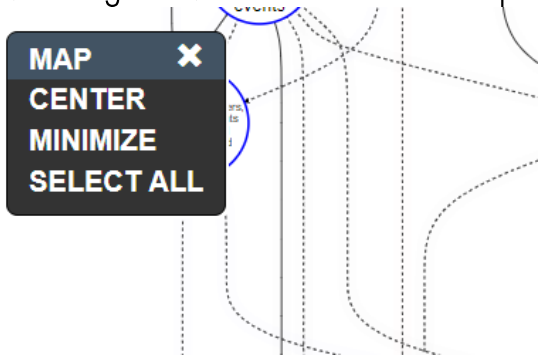
Based on the frustration with using the software that I have seen in trainings, the software could definitely use some work in this area.
Even a pop up message that indicates that work may be lost would be somewhat helpful.

6. Recognition vs. recall

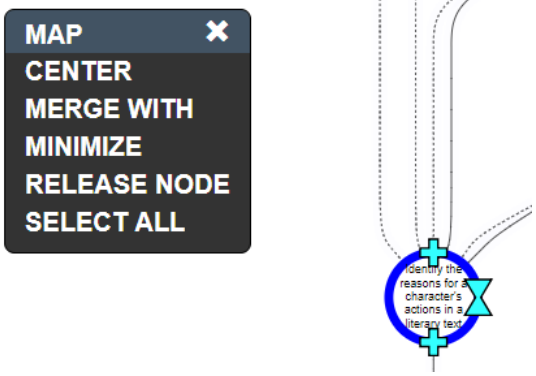
This aspect of the evaluation does not fit with the software or the purpose a user would "attack" the map.

7. Flexibility and ease of use

The software employs three different context menus for use in manipulating a map. The context menus change based on the previous action the user chose. The best example of this is the Map context menu.
For example:
No changes have been made to the map.



Several actions have occurred.



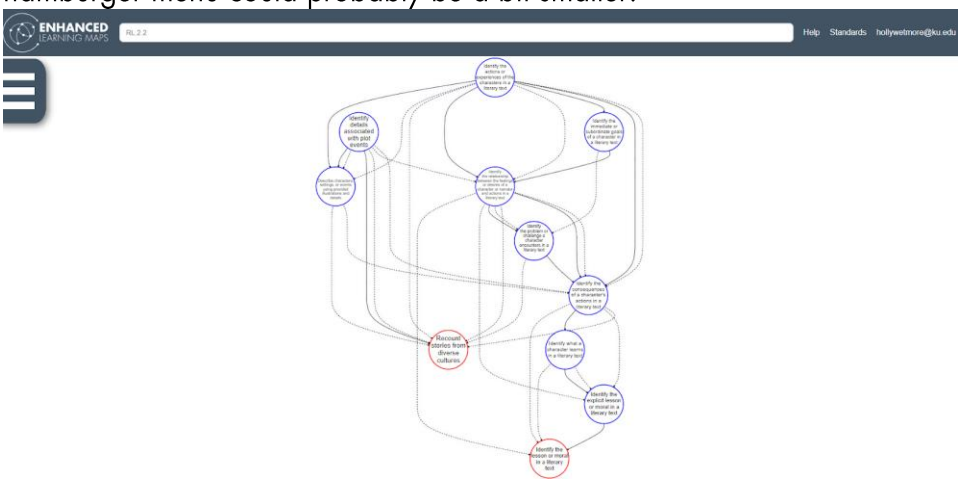
If a novice user accesses the Map context menu at the basic level, they won't be overwhelmed by the choices. If a super-user is working in the map, the options fit their needs.

8. Aesthetic and minimalist design

Home page: Designers and focus groups were utilized to arrive at the design for the home page. This view is inconsistent with the map visual that is the main component of the software (and the research project), so much discussion and prototyping has been given to transforming the

standards table to look like a map. In the end, that visual is just too cluttered. This is the home page.

Map View Pane: The clean white space of the screen helps to highlight the displayed map. The hamburger menu could probably be a bit smaller.



The web-designed logo does not include one of the signature colors for the project - a turquoise green. Perhaps incorporating that in some way for the top banner could make more of a connection to all the materials that are used by the project.

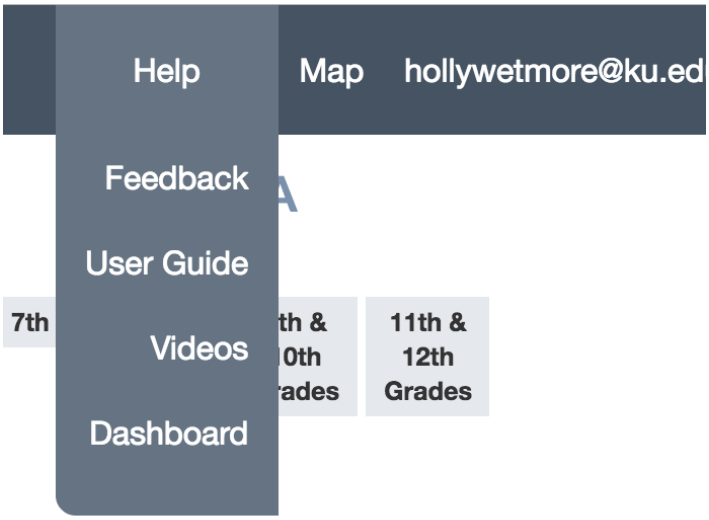
9. Help error recovery

There aren't really any actions that happen in the software that would cause an error.

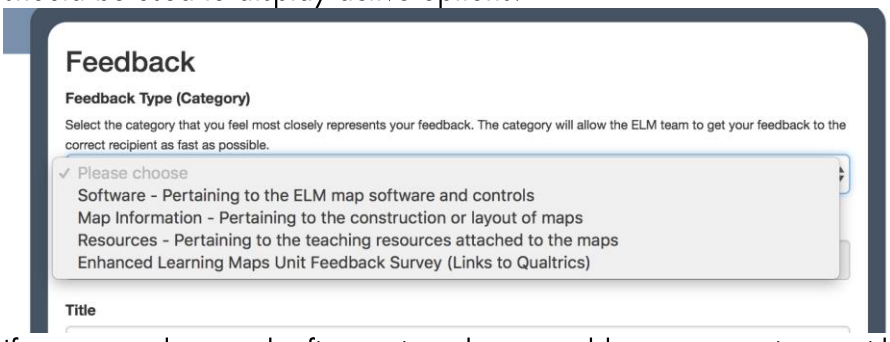
The login screen provides a link to request a password reset if the user is unable to successfully log in.

10. Help and documentation

There is a clearly labeled help tab that is located in the heading of the webpage. It is always visible to the user. However, the items in the Help tab are not all related to help. The only item that is clearly labeled as relating to getting support would be the user guide. Here are a series of screenshots highlighting what is provided in the Help menu.



Clicking on Help opens the menu. The options in the menu are visually identical to help. Clicking on help again does nothing. Seems like it should change color or the background color/shading should be used to display active options.



If someone chooses the first option, they are able to communicate with the site developer. However, the language used in the description does not indicate that this is where