

## Heuristic Evaluation of eduCulture

### 1. Problem

An educational UI equipping teachers with tools to better support individual ESL student learning with student progress tracking, class material analysis, and feedback reports, as well as class-specific performance metrics for teacher feedback.

### 2. Violations Found

#### 1. [H1 Visibility of System Status] / Severity 4 / Found by: E

When going from the home screen to Students, the navigation bar shows a specific period's roster and assumes Period 1 is the default. It isn't clear why Period 1 is the default (unless the teacher only has 1 period) and why there isn't an option to default see all students then filter by a period. Going from home screen to a specific period's roster isn't necessarily clear.

Fix: Have the students page default show all students and add a filter option that updates the navigation bar to show specific periods

Or

Fix: Keep the current navigation hierarchy but have the period 1 portion be a drop down that allows you to change the period easily and have a "All periods" option

#### 2. [H1: Visibility of system status] / Severity 1 / Found by: C

When the user first opened the prototype, the user may be confused as to whose profile it was. It took me some time to remember that this was the teacher's profile.

Fix: Add some sort of icon with the teacher's name so that we know they are a teacher.

#### 3. [H2 Match between System and Real World] / Severity 3 / Found by: A

In the Home Page, there is a graph with several plots in the Progress component. Inferring that these plots reflect class stats, users may still be confused about why it is plotted in a linear, continuous plot. Users may be more acquainted with a bar chart, or a standard line plot instead of a smoothed line plot to report discrete data.

Fix: Switch to a bar chart or standard line chart that maps out discrete progress by week.

**4. [H3 User Control and Freedom] / Severity 3 / Found by: A, E**

On all pages that have the breadcrumb navigation on the top left, users are not able to click on its components to navigate to where they want to go.

Fix: Link breadcrumbs to the correct pages.

**5. [H3 User Control & Freedom] / Severity 2 / Found by: A, E**

When on a Student's profile screen, there is no explicit way of going back to the list view of students after selecting a specific student. Similarly, when on the student screen, there is no way of going back to the home screen. Likewise, When on a post-analyzed lesson plan, there is no way to go back to lesson materials other than clicking on Lesson Materials.

Fix: Add a back button or allow the "Home > Students > Matthew Tan" indicator be navigation links.

**6. [H3 User Control and Freedom] / Severity 4 / Found by: D**

The vocab section has a few pieces of information highlighted, and this might prompt the user to want to highlight for themselves certain words that may have been missed or revise, edit, or make notes to those words as new information comes in. However, there is no option to highlight or edit words beyond the ones that are already highlighted for you.

Fix: Have a highlighter or edit option for users to use in the vocab section.

**7. [H4 Consistency and Standards] / Severity 2 / Found by: A, B**

In the Home Page, there is a component titled Class Materials and a button to navigate to Lesson Materials. The functionality of these two components are virtually identical. The user may be misled to think that these two sections are not the same.

Fix: Rename Lesson Materials to be Class Materials (this is broader).

**8. [H4 Consistency and standards] / Severity 3 / Found by: D**

In the home page, for Period 1 progress, the graph is shown as a line graph whereas the individual student's progress is shown as a horizontal thermometer type of chart. It may be difficult for users to use these two different charts to compare and contrast data. This is inconsistent with the Class Profile's page as well.

Fix: Have consistent charts (ex: use both line graphs) on both the home page and student's progress page.

**9. [H4 Consistency and Standards] / Severity 3 / Found by: A, B, D, E**

When a user clicks goes to the Lesson Materials page after clicking the Lesson Materials button on the top left, the title of the page is Content Analyzer, as well as the breadcrumbs navigation on the top left showing Home > Content Analyzer.  
Fix: Name the page Lesson Materials and update the breadcrumb navigation to match or name the button on top Content Analyzer

**10.[H4 Consistency and Standards] / Severity 3 / Found by: A, C, E**

When in the Lesson Materials page and the user clicks on Students in the navigation bar, it takes the user to the Class Profile page. This is inconsistent when navigating to the Students page from the Home Page or from an individual student's profile page (e.g. Matthew Tan's page).  
Fix: Have Students (roster) page be linked when clicking Students from Lesson Materials page.

**11.[H4 Consistency and Standards] / Severity 3 / Found by: A**

When a user selects a file to analyze, they are taken to the Content Analyzer page. There is no option to navigate back in the form of breadcrumb navigation, whereas other pages do have this functionality.  
Fix: Have the breadcrumb navigation in the Content Analyzer page.

**12.[H4 Consistency and Standards] / Severity 2 / Found by: A, B, C, D, E**

In the Content Analyzer page for the Volcano Reading, there is text that is highlighted in yellow and other text that is highlighted in purple. By inference, I assume these are annotated for Vocab and Culture. Users may be confused which one (Vocab or Culture) the text is annotated for, as there is no color coding for the text or checkboxes Vocab and Culture. Also, there is an inconsistency between the highlighted word and the analysis page that pops up. Ex: "volcanic ash" is highlighted in yellow but if you click on it, a purple page opens up to the right.  
Fix: Have Vocab be highlighted in yellow in the same style as the text and have Culture be highlighted in purple in the same style as the text. Possibly include a legend.

**13.[H4 Consistency and standards] / Severity 1 / Found by: D**

Lessons materials page has a different showcase of readings than the Class Materials page in the Home Screen. For example, the Volcano basics button and Lesson\_10\_26 button are shown in both sections (albeit out of order) so I

expected to see the rest of the button that appeared in Class Materials also featured on Lesson materials, but they were absent.

Fix: Have consistent buttons in both Class Materials and Lesson Materials page, so that it is obvious to the user that these Class Materials items were “previously upload[ed]”

**14. [H4 Consistency and Standards] / Severity 3 / Found by: A, C**

When on the Preview step of the Feedback Report, the styling of the custom feedback is the same as it is on the previous page when it can be edited. It also does not show the entire text. Users may be confused and try to edit it, which would be consistent with the action of the previous section, or have difficulty viewing the entire message.

Fix: Display the custom feedback as text in its entirety, with no stylized purple box around it.

**15. [H4 Consistency and standards] / Severity 2 / Found by: D**

On the Create a Progress Report page, the Preview option first shows the custom feedback at the top. However, while generating the report, this feedback is the last question that is asked.

Fix: Ask feedback first while generating the report, or move the statement in the Preview page to match when it is asked sequentially as a question.

**16. [H4 Consistency and Standards] / Severity 4 / Found by: A, B, C, D, E**

In the Content Analyzer page for the Volcano Reading, the user is not able to check/uncheck the boxes for Vocab and Culture, even though the checkboxes imply that this can be done. These boxes can also blend in with the document and look like it's from the document.

Fix: Add functionality to check/uncheck boxes.

**17. [H6 Recognition Rather Than Recall] / Severity 3 / Found by: A**

In the Home Page, there is a graph with several plots in the Progress component. Inferring that these plots reflect class stats across weeks, users may want to know why at certain points performance was higher/lower and may want to recall certain assignments or materials that were covered. Currently there is no way to do that other than manually going through their lesson materials on another page.

Fix: Add (optional or hovering) annotation of summary of class material covered and synthesis of highlights/challenges to points (lessons or weeks) in the Progress graph.

**18. [H6 Recognition Rather Than Recall] / Severity 3 / Found by: A, B, D**

In the Home Page, the graph in the Progress component does not have labels to the plots. Users may have confusion about the information presented, even if they had just come back from the Class Profile page.

Fix: Include labeling of the plots as well as perhaps some description.

**19. [H6 Recognition Rather Than Recall] / Severity 1 / Found by: D**

The Roster page contains an overview of all of the students' profiles, but there is no indication as to how many students are accounted for in this list. A teacher may want to quickly see how many students are in their class as they examine this list. Similarly, there should be a number describing how many students are in the class in the Progress graph in the Home page.

Fix: Add a Total Number of Students Button in the Roster page at the top and a button next to the Progress graph.

**20. [H6 Recognition Rather Than Recall] / Severity 1 / Found by: E**

In the Today's Plan section of the home screen, the user should not have to remember what today's date is versus the dates that they see below the file names for relevant files.

Fix: Show Today's date within the Today's Plan section, and annotate what the dates for each file represent

**21. [H6 Recognition Rather Than Recall] / Severity 2 / Found by: E**

In the Lesson Materials view, it's not clear what the dates refer to (could be upload date, lesson plan date, etc).

Fix: Annotate what the dates represent, and allow for grouping/sorting of previous uploads by lesson plan, date, or other filters.

**22. [H7 Flexibility and Efficiency of Use] / Severity 3 / Found by: A**

On the Home Page, Class Materials seem to be organized in reverse order of upload date. As users upload more files, it may become inefficient to navigate through the number of files in a scrolling fashion.

Fix: Have sorting options for Users, as well as options to tag files for which week or lesson to provide an easy-to-navigate Class Materials component.

**23. [H7 Flexibility and Efficiency of Use] / Severity 2 / Found by: A, B, C, D, E**

On the Lesson Material screen, seeing all previous files from lesson plans may be overwhelming with more than a couple of files.

Fix: Have folders for lesson plans or some directory structure

**24. [H7 Flexibility and Efficiency of Use] / Severity 4 / Found by: A, D**

In the Content Analyzer page for the Volcano Reading, the user is not able to navigate through the annotations without manually finding them and clicking on each. This may become inefficient if the document is very long or sparsely populated with text annotations.

Fix: Have an option to navigate Forward and Backward (using arrows) between the annotations. Or have a search bar

**25. [H7 Flexibility and Efficiency of Use] / Severity 2 / Found by: B, C, E**

You can only see the graph from the home page, and it is slightly inconsistent to have that disappear once you enter the actual class profile. I would think that you have more detailed data once you get into a class, but I would have to go back a page to see the progress chart.

Fix: Have an analysis tab in the class page with the graph.

**26. [H7 Flexibility and Efficiency of Use] / Severity 3 / Found by: C, E**

Having to click on Grades/Progress to press the "Create Feedback Form" button may be limiting to teachers. In the chance they want to send general feedback, having the option from the About tab may be useful. Similarly, if teachers want to see other teachers, and then directly make a feedback report, having the option from the Contacts tab may be useful as well.

Fix: Have "Create a Feedback Form" on all student-profile views (About, Grades/Progress, Contacts)

**27. [H7: Flexibility and Efficiency of Use] / Severity 2 / Found by: B, C**

It took a couple of wireframes to find Matthew Tan. I would like to see other ways to find a student.

Fix: Add a quick search to find a student profile

**28. [H8 Aesthetic and Minimalist Design] / Severity 2 / Found by: A, C**

When sending a feedback form, it is hard to differentiate the description from the suggestion so try to make that more clear with different colors, or more spacing.

Fix: Use different colors and space out the two lines. In the analysis page of a lesson plan

**29. [H8 Aesthetic and Minimalist Design] / Severity 2 / Found by: D**

On the Volcano basics page, the word analysis section is much clunkier and text heavy than the rest of the interface. For example, in the Matthew Tan Grades and Progress section, many visuals are used to aid points and consequently, but this section has a completely different look and feel. Nowhere else in this interface is there a place that is as text heavy as this word analysis section.

Fix: Volcano reading analysis section to contain more visuals (icons) and fewer words. Trim down to only what is necessary

**30. [H8 Aesthetic and Minimalist Design] / Severity 2 / Found by: A, D**

After sending a Feedback Report, the component displays the text “Feedback Report Sent”. The pop-up component does not resize. It would be more visually appealing and intuitive if the Report Sent message was displayed in a different pop-up separate from the Feedback Report pop-up component

Fix: Have a smaller notification-style pop-up for “Feedback Report Sent!”.

**31. [H8 Aesthetic and Minimalist Design] / Severity 1 / Found by: E**

The large progress bar for a 4 step report generation flow could be annotated since there are so few steps

Fix: Annotate the progress bar or use a dot-progress bar with 4 dots

**32. [H8 Aesthetic and Minimalist Design] / Severity 1 / Found by: C,E**

The large initials for the student profiles is a bit overwhelming and draws attention away from the core features of the platform at times.

Fix: Reduce the font size of default initial profile pictures for students

**33. [H8 Aesthetic and Minimalist Design] / Severity 2 / Found by: B**

There are two views for the roster that do the same thing, as there is no additional functionality in the second view. It’s just another screen to get to in order to see a student profile, which makes the task more difficult and having more room for error.

Fix: Eliminate the list-view and put the grid view in the class page.

**34. [H10 Help and Documentation] / Severity 4 / Found by: B, C, E**

When the feedback form is submitted, I’m not sure where it went and how I could access it again for future reference, it just disappears into the void. I would like to see past reports sent for that student and maybe even some updates or follow-ups from that form.

Fix: Show sent forms in the student's profile.

### 3. Summary of Violations

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
H1: Visibility of Status [pau]		1			1	2
H2: Match Sys & World [pau]				1		1
H3: User Control [sean]			1	1	1	3
H4: Consistency [Neha]		1	3	5	1	10
H5: Error Prevention []						0
H6: Recognition not Recall [sean]		2	1	2		5
H7: Efficiency of Use			3	2	1	6
H8: Minimalist Design		2	4			6
H9: Help Users with Errors						0
H10: Documentation					1	1
<b>Total Violations by Severity</b>		<b>6</b>	<b>12</b>	<b>11</b>	<b>5</b>	<b>34</b>
<b>Note: check your answer for the green box by making sure the sum of the last column is equal to the sum of the last row (not including the green box)</b>						

#### 4. Evaluation Statistics

ex) If Evaluator A found 1 of the 4 total severity 1 violations, they would put down 25%

Severity / Evaluator	Evaluator A	Evaluator B	Evaluator C	Evaluator D	Evaluator E
sev. 0					
sev. 1	0%	0%	33%	33%	50%
sev. 2	50%	50%	25%	42%	42%
sev. 3	81%	18%	27%	27%	36%
sev. 4	40%	40%	60%	60%	60%
<b>total (sev. 3 &amp; 4)</b>	69%	25%	38%	38%	44%
<b>total (all severity levels)</b>	50%	30%	33%	38%	44%

\*Note that the bottom rows are *not* calculated by adding the numbers above it.

#### 5. Summary Recommendations

As a group, we recommend the following main points:

##### Navigation:

There were any inconsistencies found in navigating. On a functionality level, many of the navigation links did not work, and some did not link to the corresponding page. On a usability level, we recommend that the design be updated so that the user has more flexibility in navigating backward.

##### Labeling:

There are some inconsistencies with labels of tabs not matching their functions. Both class plans and lesson plans are seen on the home page, and it is uncertain if they mean the same thing. Lesson materials tab leads to the content analyzer along with some lesson materials. Is the function of this page to store materials or to do the content analysis? The breadcrumbs should also match the title/function of this page.

##### Feedback Reports:

In particular with the feedback reports, we think it'd be useful for teachers to be able to send reports from any of the student pages/class pages (if sending a class-wide

report), and likewise to emphasize feedback in these reports based on the report flow. Also as important, we believe that there should be a way to see previous feedback reports that were submitted in the past.

### Graphs:

The main page contains a graph that is particularly confusing to read. It says it's a Progress graph for the class but it is a line graph that consists of three lines that are not labelled. We would recommend changing this line graph to be a clearly cumulative graph of sorts, such as by using a bar graph or another form. Furthermore, in the Students Progress section, the graph there is different from the Progress graph in the main page, and it can be difficult to compare and contrast one student's progress with the entire class's progress. By standardizing these two graphs, this would make the overall UI much easier to follow.

### Aesthetic Consistency:

We think that the feel/look of the volcano lesson plan does not match that of the student roster/class page does not match -- in particular, the font sizes differ and some sections look more "chunky" than others. I would make sure the sizing is accurate and consistent across all screens.

### Student Profile/Roster:

The student profile and roster flow can be clarified. In particular, there are many ways to get to a single student profile view, but the flows' navigations don't match and can cause confusion. Likewise, when trying to navigate these screens, there isn't a clear navigation bar/breadcrumb navigation that makes clear to the user what is happening/where the user is at. We think that by committing to one type of hierarchy for roster-period-class that this can be made clearer.

## **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**

### **H1: Visibility of System Status**

- Keep users informed about what is going on

## **H2: Match Between System & Real World**

- Speak the users' language
- Follow real world conventions

## **H3: User Control & Freedom**

- "Exits" for mistaken choices, undo, redo
- Don't force down fixed paths

## **H4: Consistency & Standards**

## **H5: Error Prevention**

## **H6: Recognition Rather Than Recall**

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

## **H7: Flexibility & Efficiency of Use**

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

## **H8: Aesthetic & Minimalist Design**

- No irrelevant information in dialogues

## **H9: Help Users Recognize, Diagnose, & Recover from Errors**

- Error messages in plain language
- Precisely indicate the problem
- Constructively suggest a solution

## **H10: Help & Documentation**

- Easy to search
- Focused on the user's task
- List concrete steps to carry out
- Not too large