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Interaction Design Overview, Section B

Digital Dashboard

Process Book

Table of Contents

Introduction

During this project, I took upon the role of a User Experience (UX) Designer to create a digital dashboard for a university Introduction to Game Design course. In this course, students present projects to a group of their peers (called listeners) and an instructor.

I was given a database with data to feed into the digital dashboard and user personas for three individuals:

- Joanna Blaine: a student presenter,
- Frank Tan: a student listener, and
- Professor Alanna Rodriguez: the course instructor.

I applied principles of UX Design to create a dashboard that served the needs of student listeners and the course instructor while remaining functional and aesthetically pleasing.

Data Set About Classroom Presentations

In addition to personas, I had 10 database tables with attributes related to the game design course this dashboard was to be designed for.

Table Name	**Description**	**Attributes**
StudentPresenter	A student presenter signs in with a google email. They can create presentations, write questions, and organize responses to the questions. Each presenter on a team can view their team's presentation data.	id, firstName, lastName
Presentation	A presentation is a collection of questions and responses (feedback) to those questions, for a particular team.	id, name, url, date
Question	A question belongs to a specific presentation. It is written by a student presenter.	id, presentation, student, presenter, id, text, date
StudentListener	A student listener goes to the URL for a presentation and picks any temporary username they wish to use for that presentation. They can answer questions, vote on other listener's responses, or add emojis to other listener's responses.	id, username, presentation
Response	A response is the feedback, given in answer to a question.	id, responder, questions, date, response, upvotes, presentation
Vote	Voting happens during the presentation. A vote is a +1 given by a particular listener to an individual response.	id, voter, date, response
Emoji	Emoji's can be added during the presentation. An emoji icon can be added by a listener to an individual response.	id, voter, date, response, emoji, code
Tag	Tags happen during the team's post mortem meeting. A tag is created by a student presenter to help organize the responses. For example, the presenter could tag several responses as "important" and then filter to only show those responses.	id, name, presentation
Star	Stars happen during the team's post mortem meeting. A star is a rating from 1 to 5 given by a student presenter to indicate the helpfulness of an individual response. For example, the presenter could give several comments 5 stars, then filter to only show those responses.	id, value, response, student, presenter, id, presentation
EmojiCode	Maps emoji codes to their respective icons.	code, icon

Because I was not designing a dashboard view for Joanna, the student presenter, I discounted the Tag and Star tables when making this digital dashboard. However, every other table was taken into account in order to bridge the objects in the database to the views on the dashboard.

Personas

Instructor

Professor Rodriguez has been teaching Introduction to Game Design for five years. In her class, students create games and iterate them based on feedback from the instructor and peers. She has noticed that in the past, many students check Facebook or go to sleep during student presentations, instead of giving feedback to their peers. She wants listeners to give high-quality feedback that helps the presenting design team, and to make high-quality feedback given by other listeners more visible. She also wants to know if students get distracted or stop providing feedback. Finally, she wants to be able to capture her own feedback during the presentation, over and above what she could tell the team verbally during post-presentation Q&A.

Student Presenter

Joanna is a student in the Introduction to Game Design class. She is an engineering major who is taking this course as a fun elective, because she used to love making card games for her two younger sisters. She will be presenting her game to the class, along with the rest of her design team. She wants to get helpful feedback from the rest of the class about how to improve her game in the next two weeks. She also wants to be prepared to argue her points if she and the rest of her team disagree about the feedback they received.

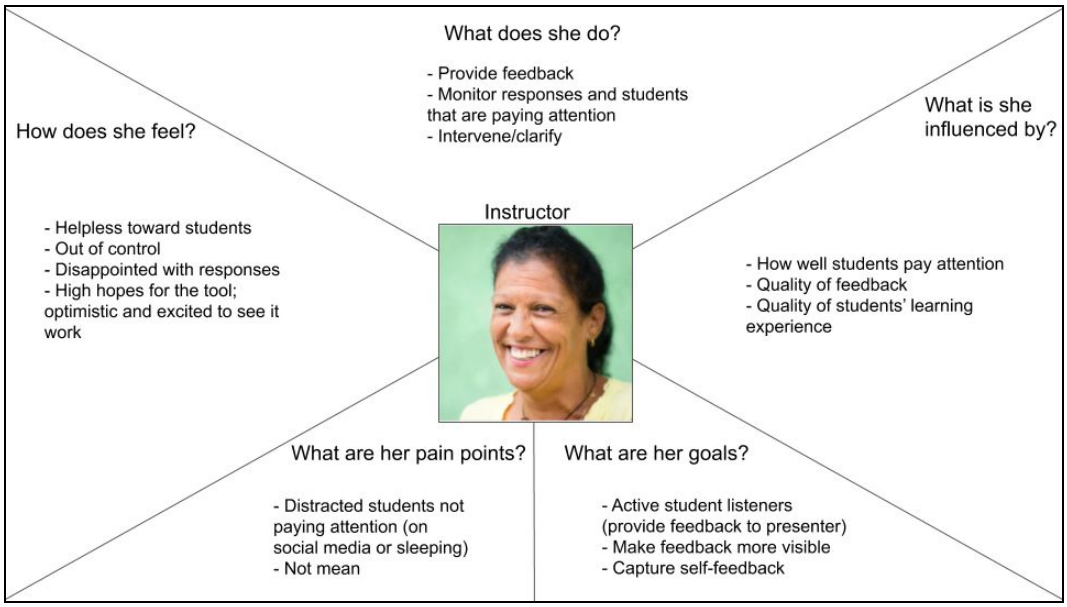
Student Listener

Frank is a student in the Introduction to Game Design class. He is an art major who wants to work in the game industry. He wants to help his peers make better games, but he sometimes gets social media notifications during class and can be distracted if he has nothing to do. He has a lot of helpful things to say about game art, but has much less feedback to offer about technology and system design.

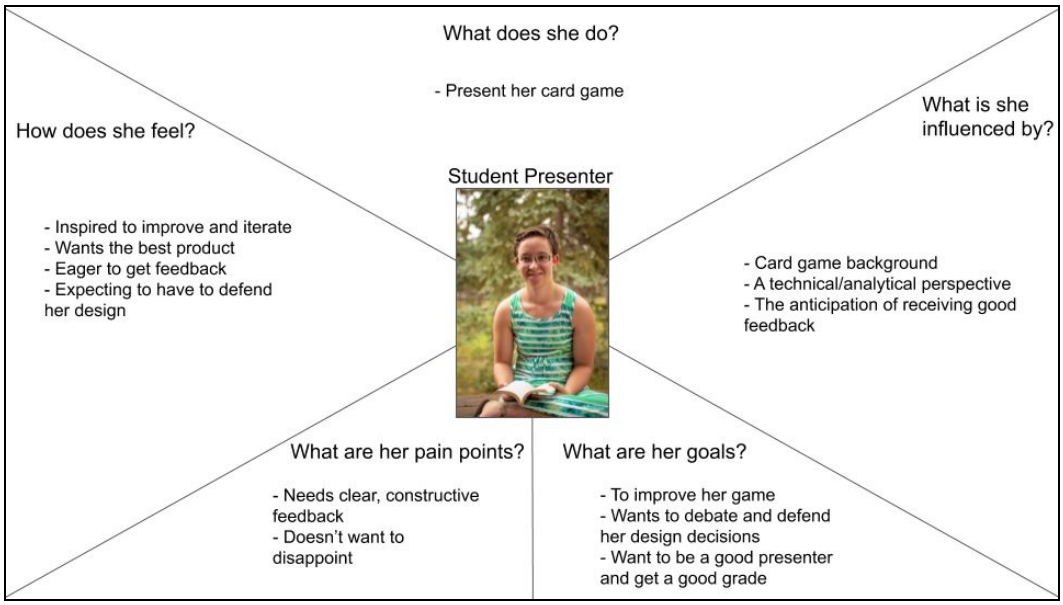
Empathy Maps

After reviewing each user persona, I worked with a team of three others to map the goals, actions (active and passive), influences, pain points and feelings of each persona. We also reviewed how the needs of each individual overlapped.

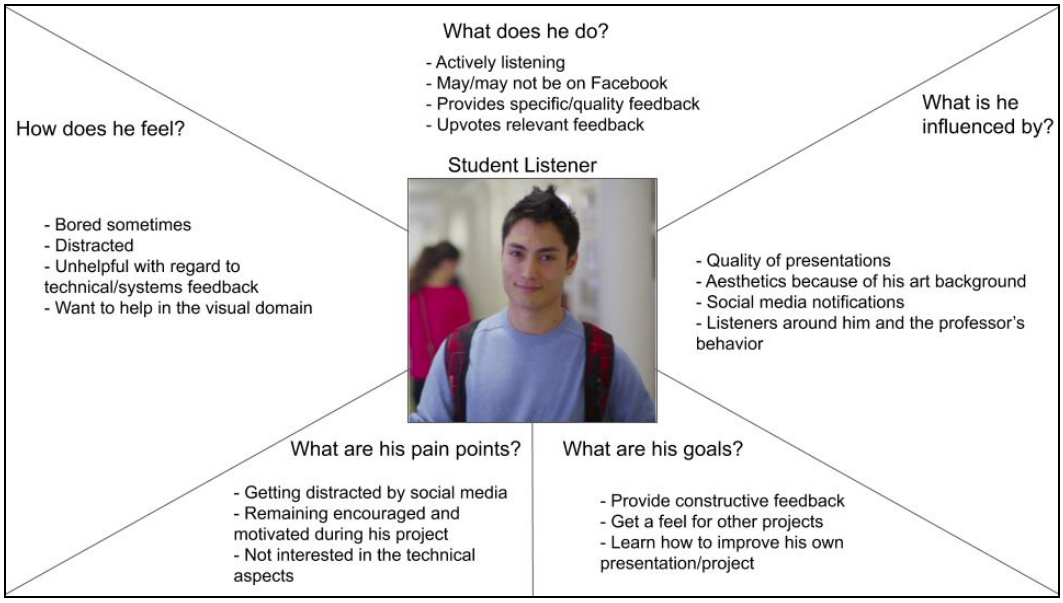
Instructor



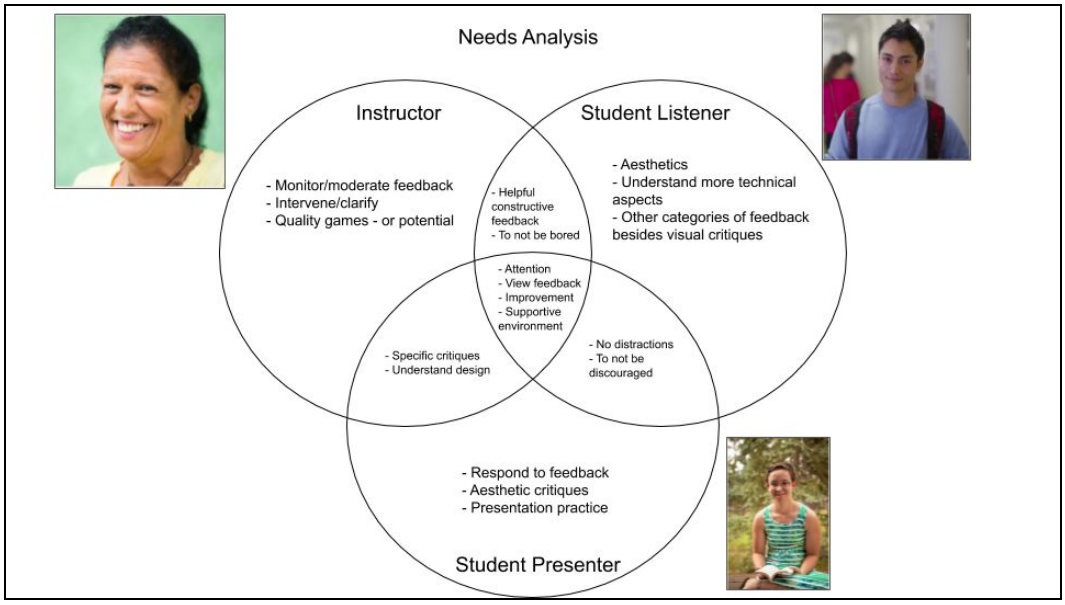
Student Presenter



Student Listener



Needs Analysis

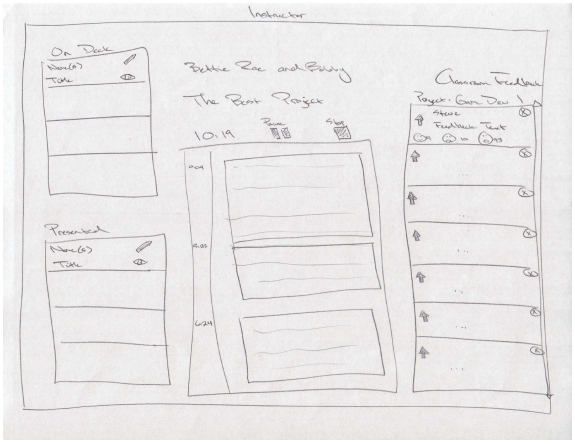
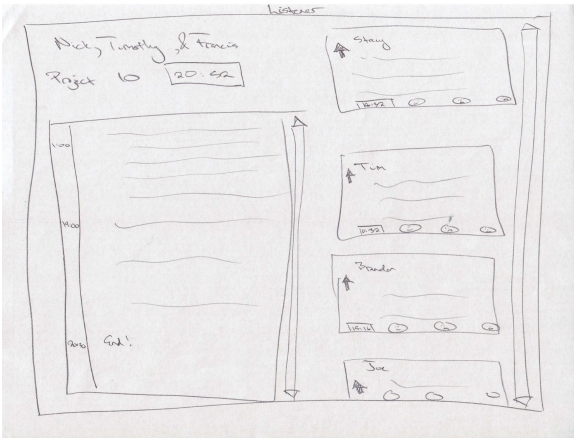
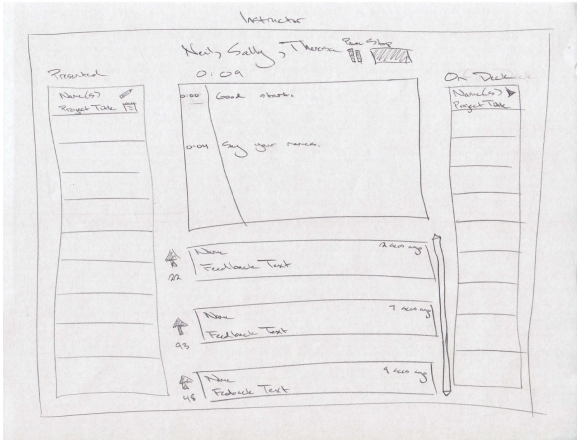
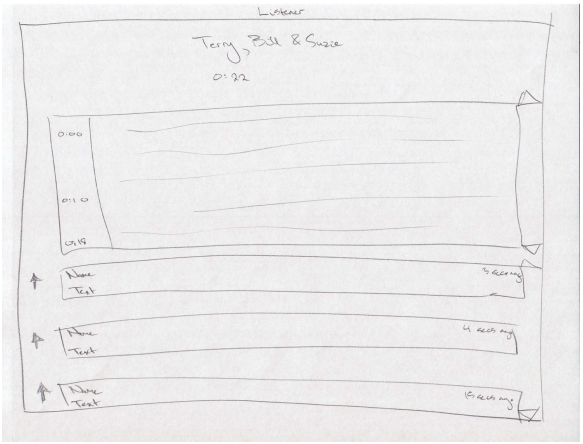


Each person in this trio needed attention, feedback, and support, and I wanted to make a tool that facilitated a supportive educational environment for teachers and students while enabling Professor Rodriguez to hold students accountable when if they get distracted in class. After this stage, I began to work on dashboard views for the Instructor and Student Listener. A view for the Student Presenter was outside of the scope of this project.

Rough Sketches

Each rough sketch for both personas had three iterations. I applied my knowledge of the grid-based web and user interfaces I have seen online during this ideation phase.

The first dashboard sketches were created with three considerations: the desire for the instructor to give feedback, to manage the presentation queue, and observe student listener activity ***and*** to control that activity when they get distracted. Data from the database were taken into account in these rough sketches - upvotes and emojis - and some icons were included as well.

	Instructor	**Student Listener**
1		
2		

The second iteration utilized a three-column grid like the first sketches and applied database data but placed a greater focus on the presentation queue instead of class Q&A. This was a mistake but a necessary step in the process.

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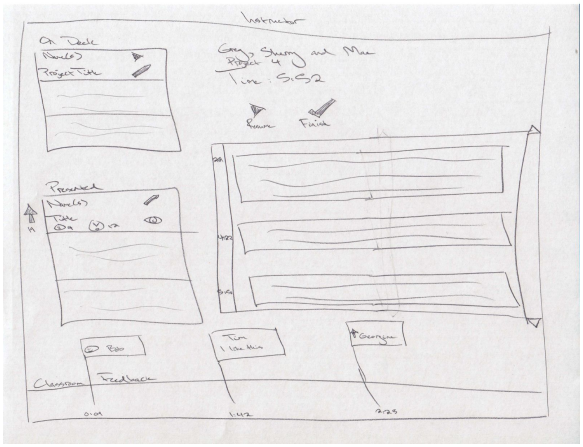
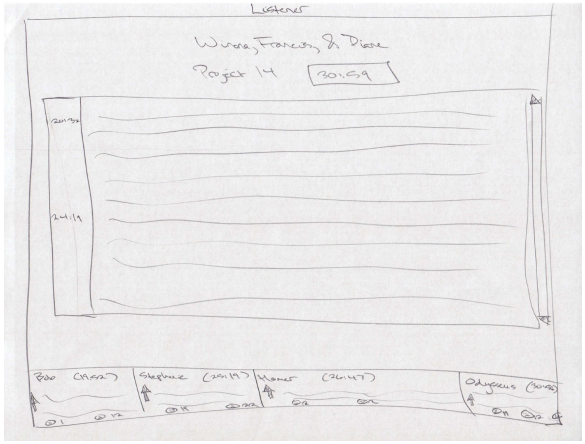
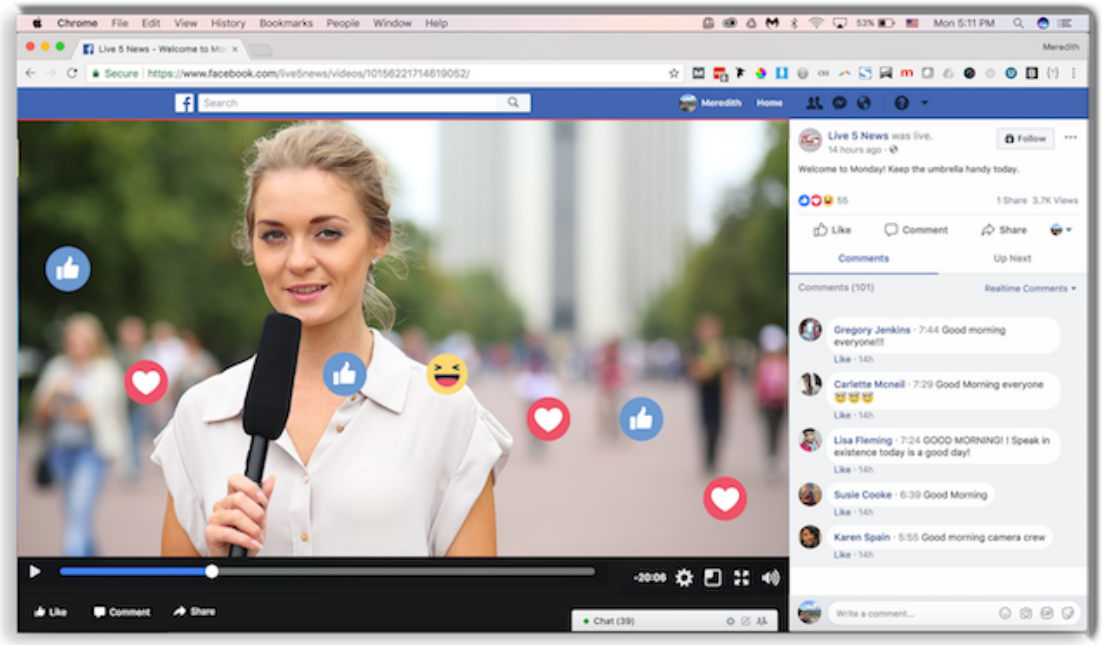




The third and final sketch has a streaming horizontal student response feed across the bottom. It was inspired by the Facebook Live interface. This attention-grabbing streaming display would have been neat to see in action, but ultimately, the black and white digital sketch (on the next page) borrowed most of its ideas from the first rough sketch iteration.



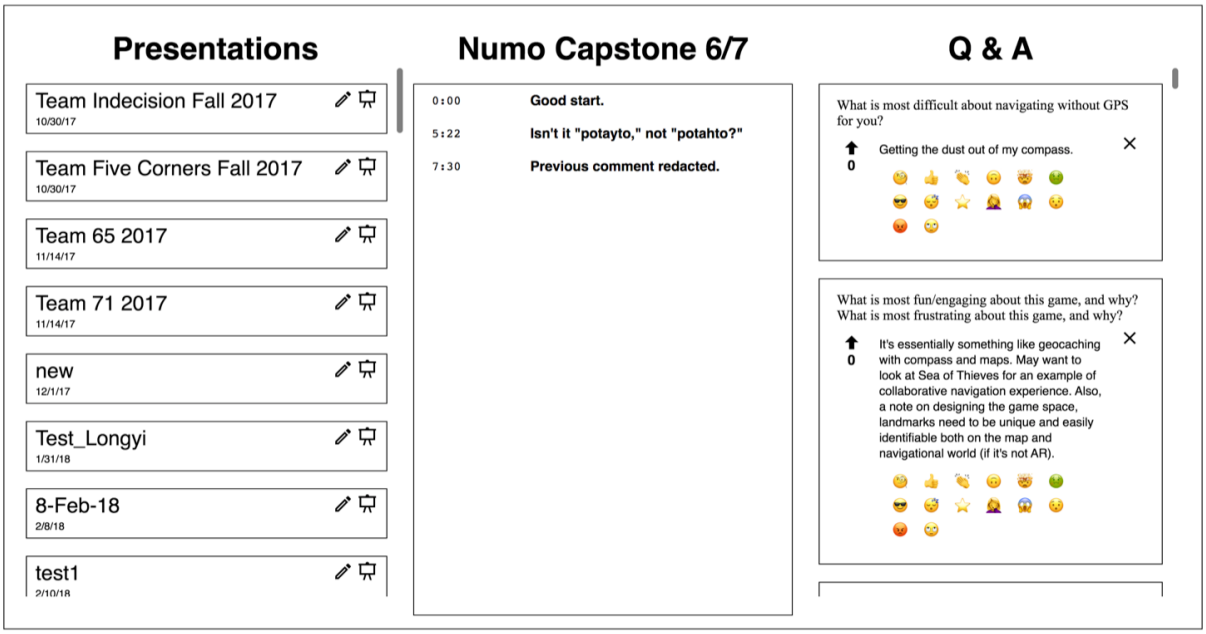
Digital Screen Sketches - Uncolored

I was very happy with iteration 1 of my rough sketches and chose to draw it using HTML and CSS. I decided to use a columnar view, splitting the screen in thirds for the Instructor and into half for the Student Listener.

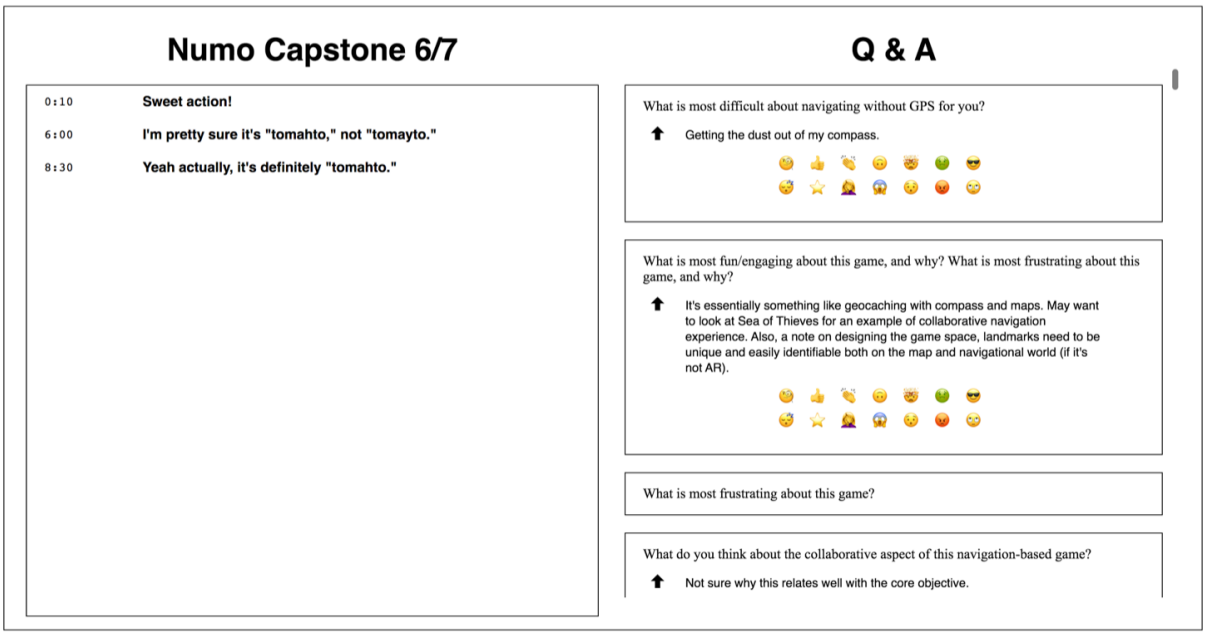
I decided to place the feedback notebook view front-and-center for the instructor, relegating presentations and classroom activity to the sides. I brought in data from the database to these views, including optional emojis for reactions to students' responses to student presenter questions.

Instructors are also given the ability to moderate student responses and view upvote counts in this view.

Instructor



Student Listener



Leaving out the input text fields was a mistake in this first digital iteration, but I did make a conscious decision to hide upvote data so students would not be biased when upvoting their peers' responses to the student presenter's questions.

Digital Screen Sketches - Colored

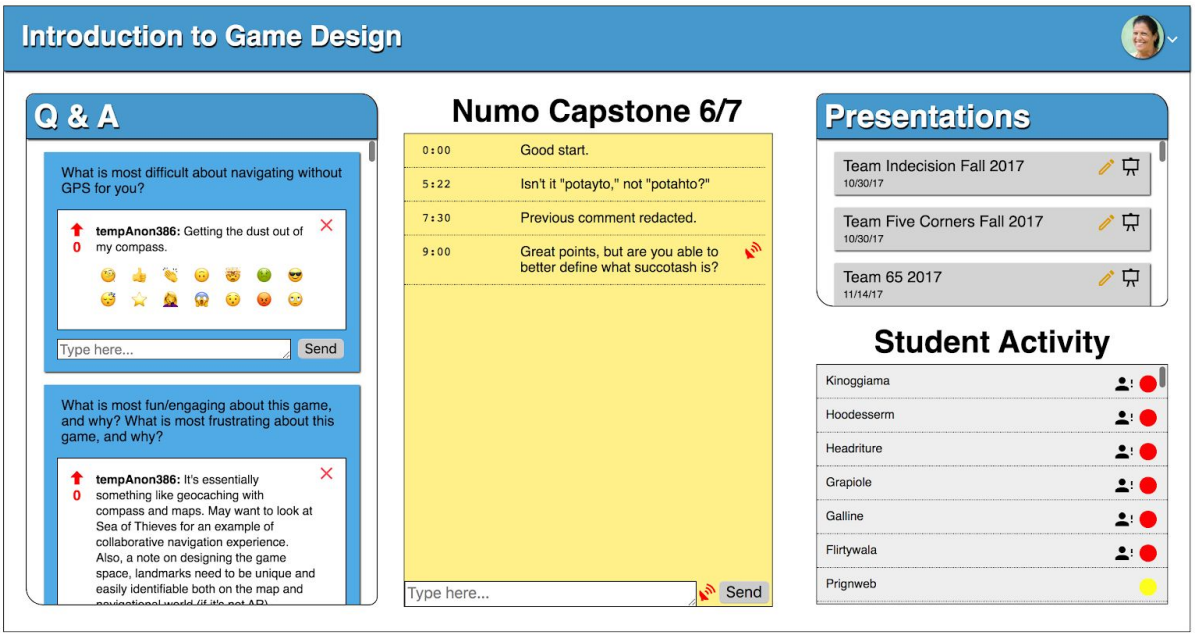
When I added color to my uncolored screen sketches, I wanted to use a soothing shade of blue contrasted with white as part of the primary color theme. This started with the newly-added top title bar and dropdown menu. I also wanted to draw attention to the student feedback notebook, where the instructor would be focused on increasing student learning, so I colored it yellow like a legal pad.

I included a speaker icon on the notebook so the instructor could remind herself to voice concerns after students' presentations, and kept the theming consistent with shades of blue and gray otherwise. Colors were selected and refined using Adobe's online Kuler color picking tool.

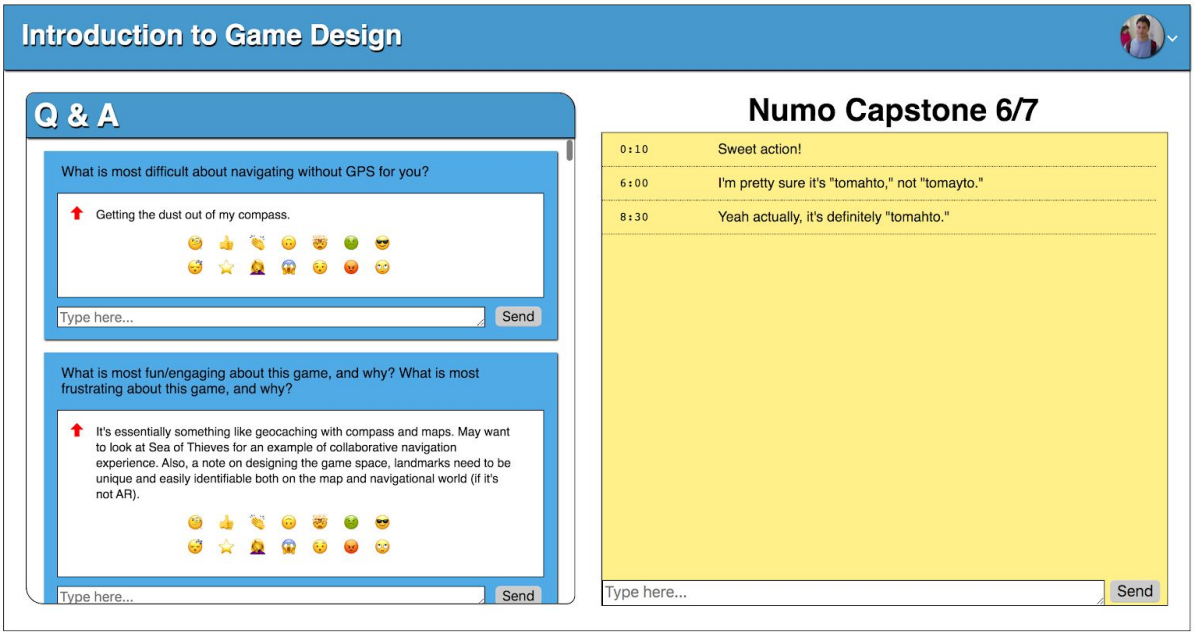
When coloring the digital screen sketch, I also changed the font used for student presenter's questions from a serif font to a sans-serif font to maintain consistency with the rest of the dashboard's font styling.

Because the Q & A section is more important than presentations, I decided to shrink the Presentations pane. I also realized in this iteration that I had neglected to include a way for the instructor to hold student listeners who were not paying attention accountable in class, so I added a Student Activity chart. Visible on the chart are sorted inactive, idle and active students. Instructors now had the ability to press a button to issue a notification to inactive students, nudging them via their own dashboards to pay attention.

Instructor



Student Listener



The student listener view has the same theme and coloring as the instructor view - without the ability to manage presentations and hold students accountable. It was at this point that I realized that the instructor was the main audience for this dashboard, and it was the student listener's duty to simply pay attention in class and remain engaged.

Digital Sketches - Animation and Revisions

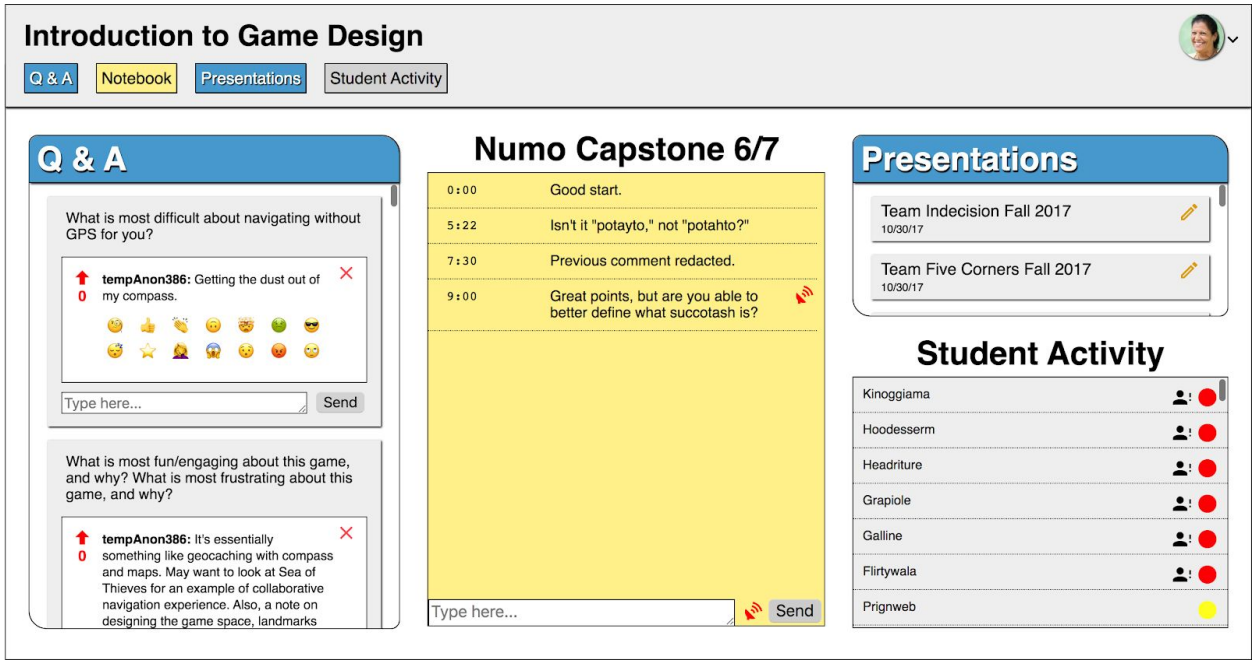
The final iteration of this digital dashboard involved adding some playfulness, delight, and feedback to the instructor's dashboard view and also addressing its busyness.

In the previous iteration, when the instructor hovered over the "nudge inactive student" icon, it would shake rapidly from left to right. I thought this would delight the instructor. This was changed to an "on-click" action to make it more delightful and satisfying while offering feedback that a nudge had been issued.

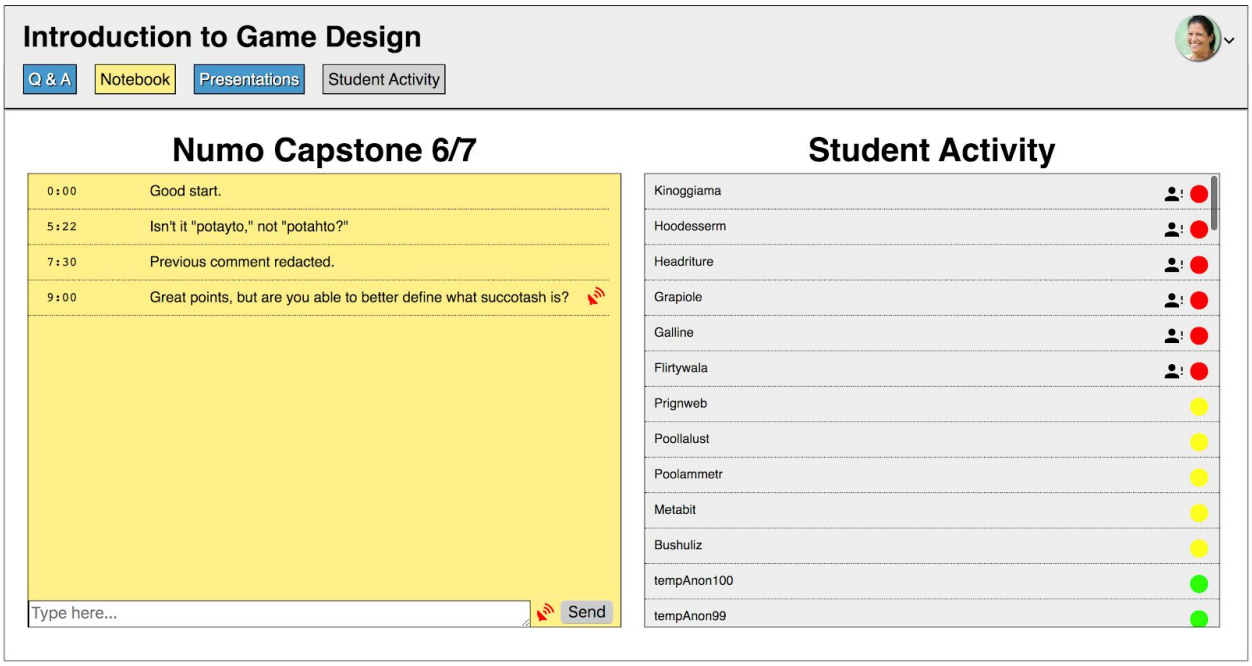
Although the instructor was primarily concerned with giving student presenters feedback and keeping student listeners accountable, I decided to address the busyness of her dashboard view. I added four left-justified buttons, with colors matching the primary theming of their respective pane. When the instructor clicks on each button, its respective pane slides up like an accordion to the top of the page.

I also wanted to maximize the focus that the instructor herself maintained during student presentations. I changed the background color of the top title bar and each "response" item to match the shade of gray used on the Presentations and Student Activity panes. This simplified the color theming from two shades of blue to one and placed further emphasis on the yellow notebook - and consequently, student presenter learning.

Instructor

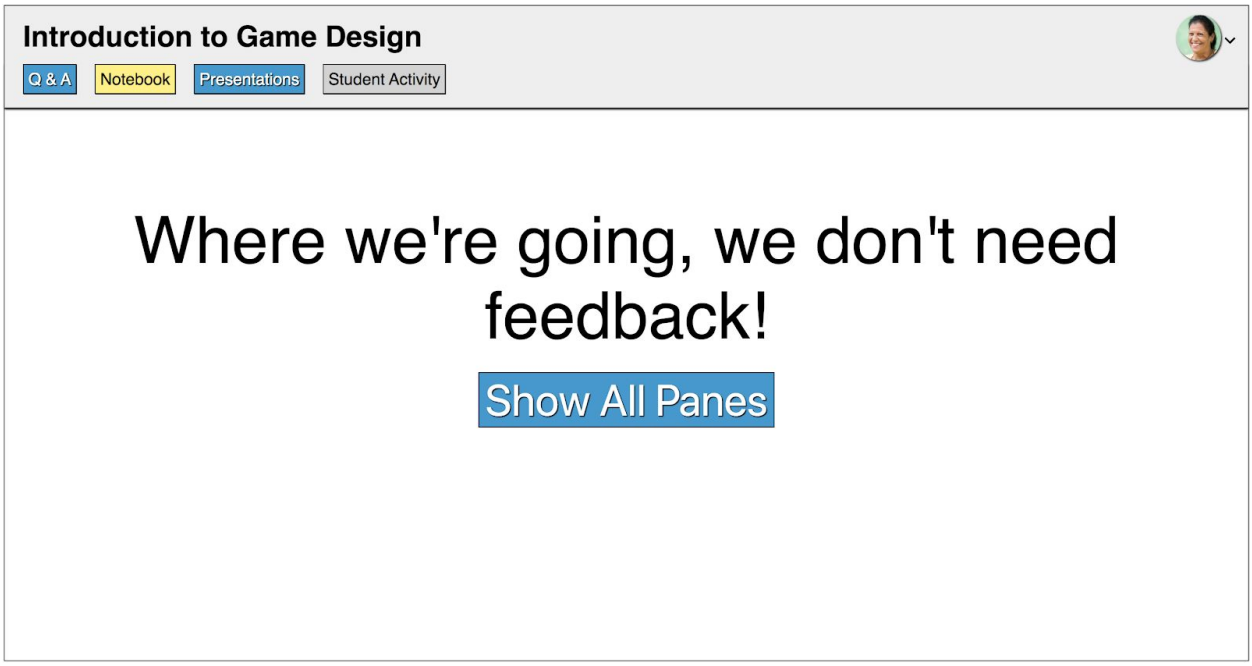


To elaborate on these buttons: If the instructor wants to pay special attention to the student feedback notebook and student activity panes, she can press the blue buttons pertaining to Q&A and Presentations, minimizing those panes.



In this view, the Student Activity pane expands to accommodate to the full length of the screen. The instructor also has the option of retracting every pane, although that defeats the purpose of the dashboard.

To add further delight to the instructor's User Experience, I added some messages to display if she decides to do this.



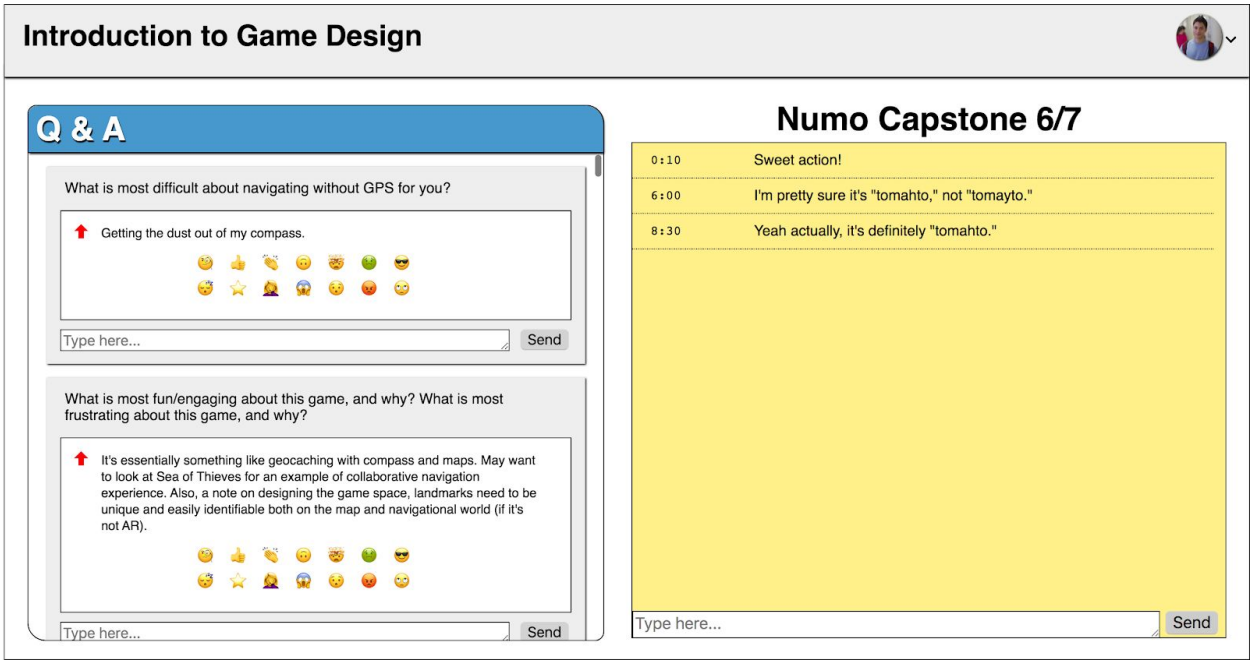
Other messages include:

- I'm sorry, Ms. Rodriguez. I can't do that.
- What happened to all the windows?
- Would you look at that? It's clean.
- You pressed all our buttons!
- No pane, no gain!
- There's nothing here!
- You made all our panes go away!

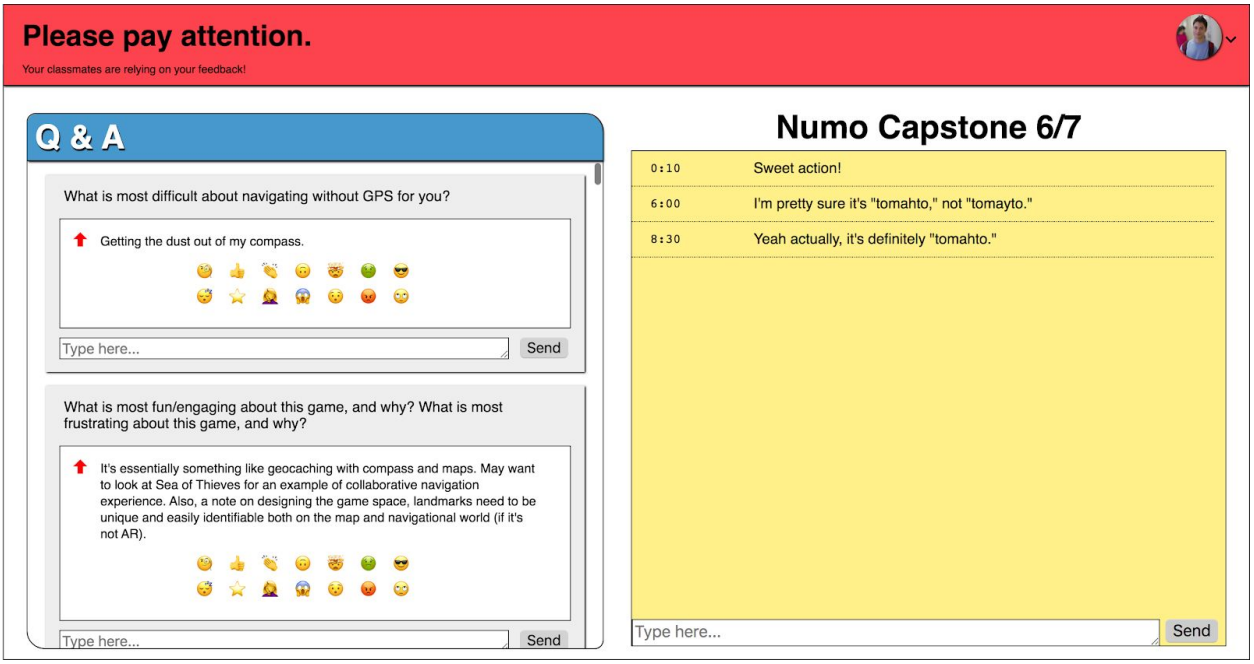
The message that displays when all the panes are retracted is chosen randomly.

Student Listener

Consistent with previous iterations, the student listener view of the dashboard mirrors the instructor's - without the ability to view presentations, student activity, upvote counts, and moderate responses.



However, in this iteration, when students listeners receive a nudge from their instructor to pay attention to the dashboard, the top title bar lights up.



I wanted to tap into the student listeners' humanity - the text below "Please pay attention" in the big, bold, red top title bar says "Your classmates are relying on your feedback!"

In addition, if the student listener happens to visit a tab outside of this one in his browser, the title changes from:

to:

This seemed like a simple, unobtrusive way to nudge the student into paying attention during class.

Conclusion and Future Directions

Moving forward, I would like to create a view for the student presenters. I feel like it would have been rewarding to take their needs into account in the development of this dashboard and include response tags, stars and to not strictly view the purpose of this dashboard as a tool for feedback and accountability but also for creation and celebration.

To begin, I would change the interface of the Q&A pane. In a real-life application of this dashboard, there would be substantially fewer questions and many more responses to each question. If given the chance to iterate again, I would place the questions in one vertical pane and the instructor/student listener could click on a question for its responses to be expanded in an Answers pane directly adjacent and pertaining to that particular question the user clicked on.

Further expanding upon the Q&A pane, I would also reduce the amount of screen real estate the emojis take up on the responses, instead adding a dropdown menu populated by emojis next to the text field where people enter their responses to questions.

If I were to further iterate upon the Instructor view, I would see if I could modify the database to explicitly mark and preserve feedback intended to be asked in-person (marked with the speaker icon). I would also like to include the ability for instructors to indicate what the student presenters' responses were to question(s) posed by the instructor and student listeners.

To further iterate upon the Student Listener view, I would create an indicator around the student's profile picture that would be colored green, yellow, or red, creating more transparency and possibly less frustration for the instructor because student listeners would know if they were being perceived as active, idle, or inactive. This requires faith that student listeners actually want to participate in class - which I hold in my beliefs about students, especially those who would take what I assume is an elective course in game design.

Before this project, I was vehemently opposed to using animations on any digital interface, but I was very delighted when I clicked on the "notify student listener" button and it shook like an instructor's fists when she thinks a student isn't paying attention in class. All in all, I am pleased that I got the opportunity to create a dashboard from scratch for the first time and apply principles from data visualization, typography, digital grid interfaces, color, and theming using visual hierarchies to create a practical and viable tool.