

Hello Professor Vesonder! Welcome to our presentation on EdChat.io. Our group members are Jocelyn Ragukonis, Diana Rosado, Joseph Scalera, Anisha Shin, and Anusha Suresh.

EdChat.io Description

- A central place for students to ask questions at any time of day and receive answers in real time from the professor as well as other students taking the course
- Each course will have its own unique identification code

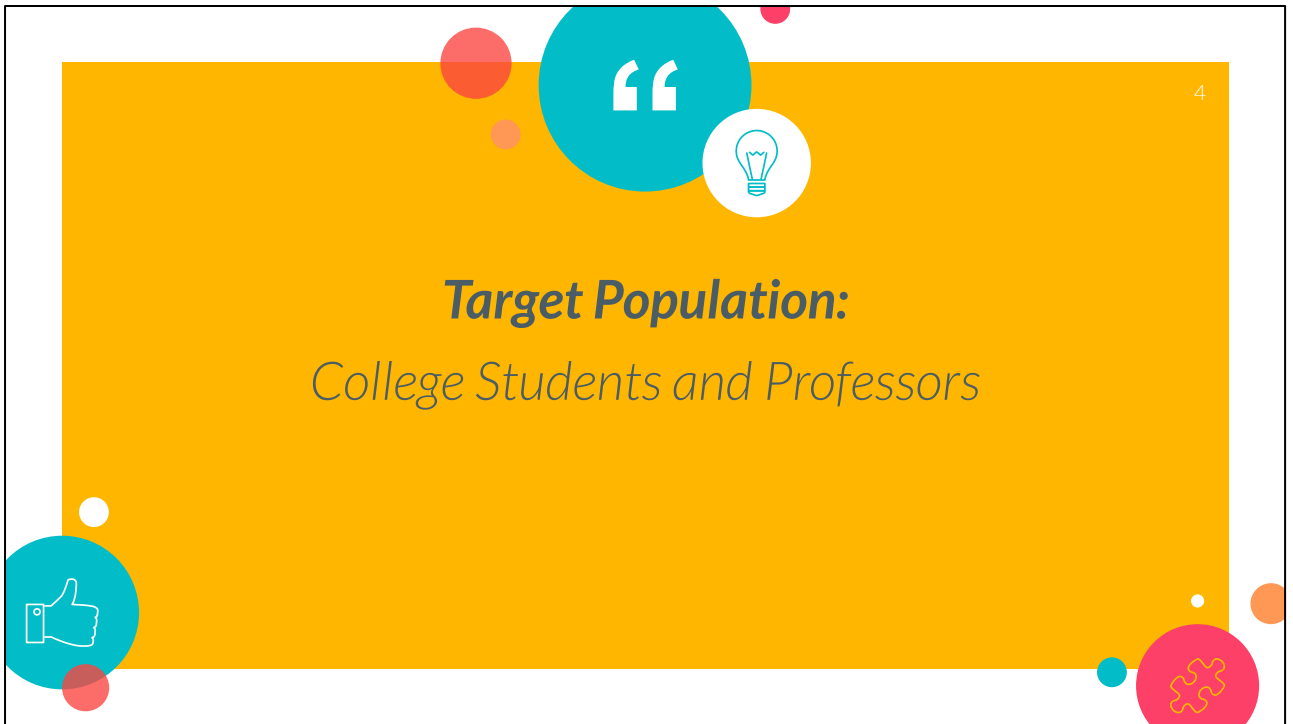
EdChat.io is an online discussion board that is meant to be used for educational purposes and to encourage asynchronous communication and collaboration in a virtual environment. Students can use EdChat.io to ask questions, which can then be answered by the professor or other students taking the course. Students will have the option to ask their questions anonymously or have their identities known. There will be a separate discussion board for each course the student is enrolled in.



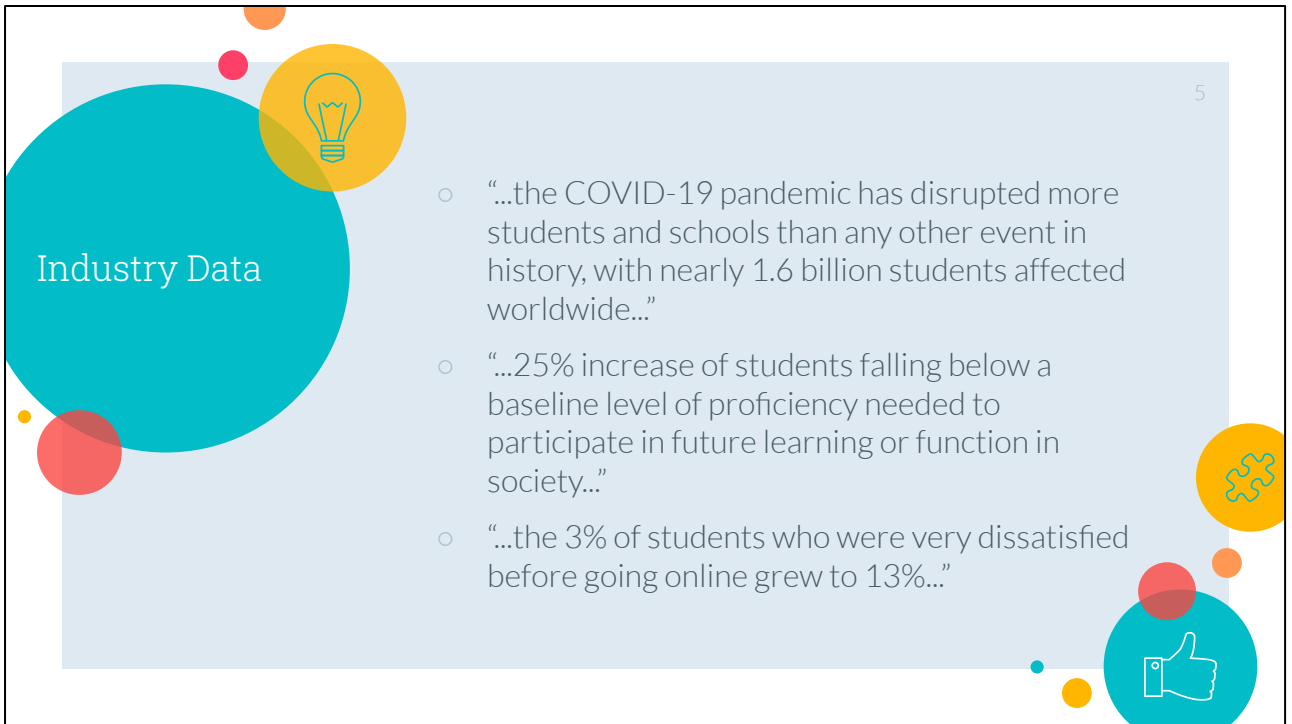
Targeted E - Engaging

- Engaging - attract users - consider what aspects of the product are most attractive and incorporate into design
- Selected Measure - satisfaction rate - how users feel when navigating through the site (overwhelmed vs. relaxed)

The E we chose to target is engaging, which is all about attracting and retaining users. In order to increase user engagement, we tried to take what features are most desired by users into consideration and incorporate those features into our design. The measure we selected to use to determine whether or not we improved our E was user satisfaction rate. Students undergo a lot of stress, and we wanted to minimize that stress as much as possible by creating a user experience that was relaxing rather than overwhelming.



Although EdChat.io can theoretically be used by students and professors of all ages, we wanted to specifically target students and professors at the collegiate level.

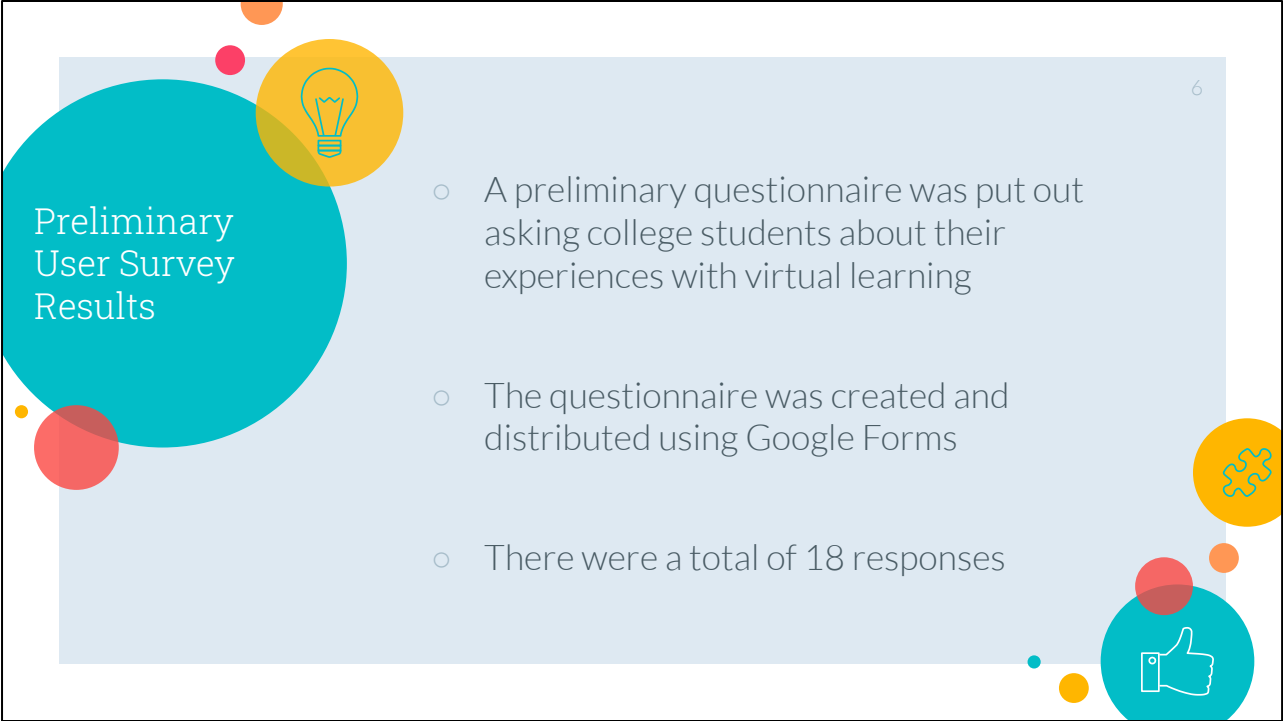


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Industry Data

- "...the COVID-19 pandemic has disrupted more students and schools than any other event in history, with nearly 1.6 billion students affected worldwide..."
- "...25% increase of students falling below a baseline level of proficiency needed to participate in future learning or function in society..."
- "...the 3% of students who were very dissatisfied before going online grew to 13%..."

In order to gather data to be used for the basis of our persona, we found industry sources containing online learning statistics. Above are some quotes that stood out to us. In summary, the COVID-19 pandemic has disrupted billions of students worldwide and has forced many students to switch to virtual learning. A number of students have been dissatisfied with their virtual learning experiences thus far, causing them to fall below baseline levels of proficiency. Better online educational platforms are needed more than ever.



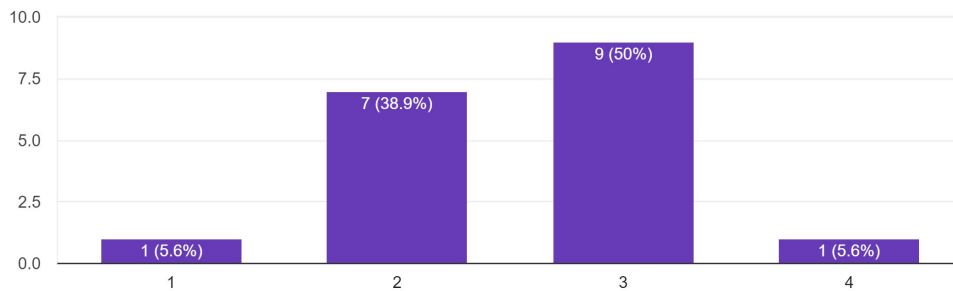
Preliminary User Survey Results

- A preliminary questionnaire was put out asking college students about their experiences with virtual learning
- The questionnaire was created and distributed using Google Forms
- There were a total of 18 responses

After collecting our industry data, there were still gaps in our knowledge, so we decided to construct a questionnaire using Google Forms. In order to create this survey, we consulted the Frary paper and lecture on questionnaire design. Our survey ended up containing seven questions and aimed to assess the users' experiences with virtual learning thus far. More specifically, it asked the users about their experiences with getting in touch with their professors and classmates, the clarity of assignments when provided only their professors' instructions, and how comfortable they are with asking questions anonymously as compared to having their identities known. The survey was filled out by 18 college students, and the data we collected in this survey was used to supplement the industry data from the previous slide in order to create our persona. The following four slides display some of the findings of our study.

On a scale of 1 - 4, with 1 being not at all easy, and 4 being extremely easy, how would you rate your experience with getting in contact with your professors during virtual learning?

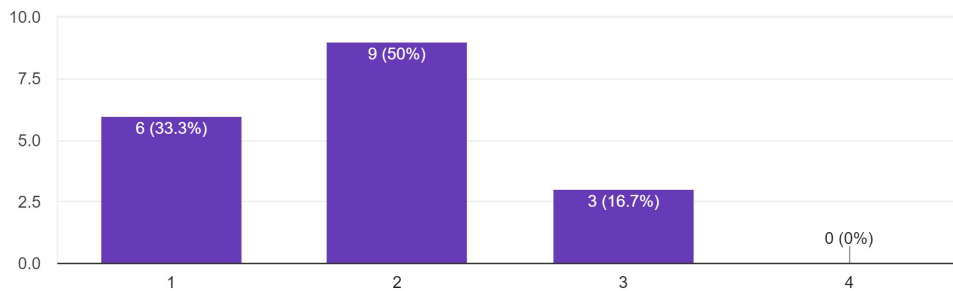
18 responses



This question asked users about their experiences with getting in touch with their professors in a remote setting. 88.9% of users fell between the 2-3 range when asked to rate the easiness of this task on a scale of 1 to 4.

On a scale of 1 - 4, with 1 being not at all easy, and 4 being extremely easy, how would you rate your experience with getting in contact with your classmates during virtual learning?

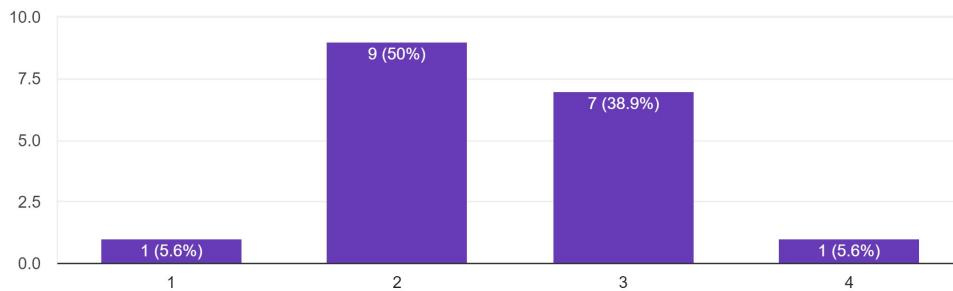
18 responses



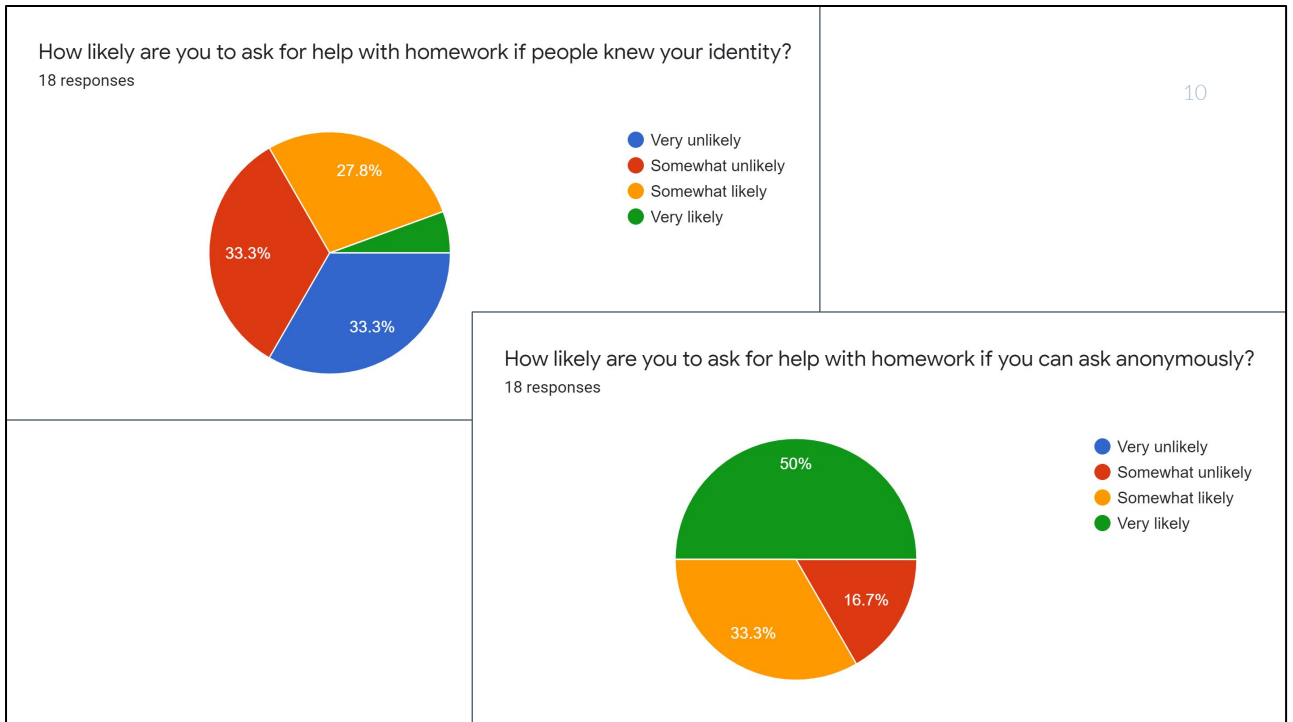
This question asked users about their experiences with getting in touch with their classmates in a remote setting. 83.3% of users fell between the 1-2 range when asked to rate the easiness of this task on a scale of 1 to 4. It is evident that students across the board struggled more with contacting their classmates as compared to contacting their professors.

On a scale of 1 - 4, with 1 being not at all clear, and 4 being extremely clear, how clear are assignments to you when you are only provided the professor's instructions?

18 responses




This question asked users about the clarity of their assignments when provided only with their professors' instructions. 50% of users responded with a 2 when asked to rate the clarity of their assignments on a scale of 1 to 4. This indicates that these users either guessed on their assignments or had to seek out ulterior means to fill in the gaps in their knowledge, whether that be reaching out to their professor, their classmates, or online resources.




These two questions asked users about how comfortable they are with asking questions anonymously as compared to having their identities known. It is clear that users prefer being able to ask their questions anonymously, a feature we hoped to eventually incorporate into our design.

There are several online discussion boards out there that offer educational services. However, they all have their own shortcomings, which is why they are often not used by students. We are probably most familiar with Canvas. However, the discussion boards in Canvas are usually only utilized when the professor posts a discussion question, and students are required to respond to it. Canvas discussion boards are often not used by students to ask questions, and currently, there is no functionality that exists that allows students to ask their questions anonymously. Other products currently on the market include Blackboard, Chegg, Stack Exchange, Quora, and standard email services. Based on our research, Piazza is probably the most similar to the design we had in mind in terms of functionality. However, Piazza has a user interface that is extremely cluttered and has an abundance of features, many of which are considered unnecessary by users. This creates a user experience that is extremely overwhelming.



Persona



"I work hard to understand my Calculus homework"

Age 19

Job Title Part Time Cashier


Major Computer Engineering

College Stevens Institute of Tech.

DRIVEN **ENTHUSIASTIC**

TALKATIVE **TECH-SAVVY**

Favorite Apps



User Persona

Jada Jackson

About

Jada Jackson is a sophomore in college who attends Stevens as a Computer Engineering Major. She is currently taking several remote classes through her school's platform. Sometimes when she has a question about the homework assignment, she goes on the platform, but it is a problem to navigate through the site without feeling frustrated. Because she struggles often on both homework and the site, getting assistance is everything to her.

Needs

- To finish her assignments correctly and on time
- To feel connected to her peers
- To get assistance

Frustrations

- Spending hours on homework
- Using several different software for her class assignments
- Feeling disconnected/ignored

As previously mentioned, we drew information from a combination of industry data and a Google Forms survey to create our persona. Our persona's name is Jada Jackson, and she is a computer engineering student at Stevens who is taking a number of classes remotely. An example of a persona trait that was derived from our Google Forms survey results is that Jada is frustrated when it comes to getting in touch with her professors and classmates for homework help. She is not satisfied with the online platform the school currently has in place to ask questions and desires to feel more connected to her professors and classmates in the virtual environment.



User Story

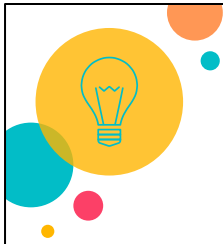
Jada has heard about EdChat.io through her professor in her MA 13 124 class. It is a discussion-based forum that allows students to ask questions about assignments assigned to a specific class. Students and professors can respond to any question.

Jada visited the site through a course identification code provided by her professor and right away, she already sees questions asked by her peers. She considers this fortunate since she was stuck on a homework assignment and this could help her understand it better.

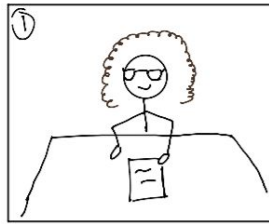
As she's finishing up her homework, she finds herself stuck on the last problem. She looks through the site and realizes that no one has asked a question yet. She quickly finds the "ask a question" button and asks away. She was able to type out where she got stuck and in just a few hours, two students responded to her post detailing how they approached the problem. The professor also added where she went wrong and guided her in the right direction.

She found this incredibly easy to do and was satisfied with the process. As a matter of fact, she found how easy it was to navigate throughout the site.

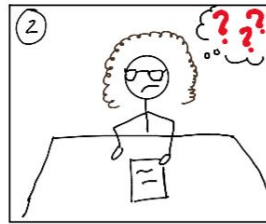
Above is a user story for our project. It provides a better feel for the user experience and describes a user (Jada) interacting with our website.



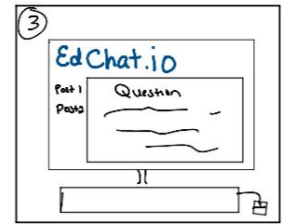
Storyboard



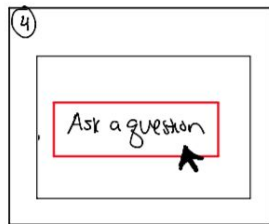
Jada is doing homework for her college classes.



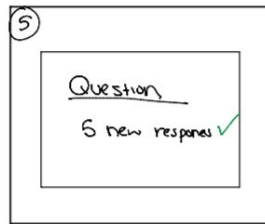
She finds herself stuck on a problem and wants to know if her peers are experiencing the same struggles.



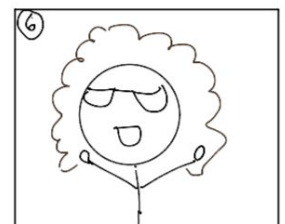
Jada goes on EdChat.io to see if any peers asked a similar question about the homework.



Jada sees that no one else has asked a question so she decides to ask.

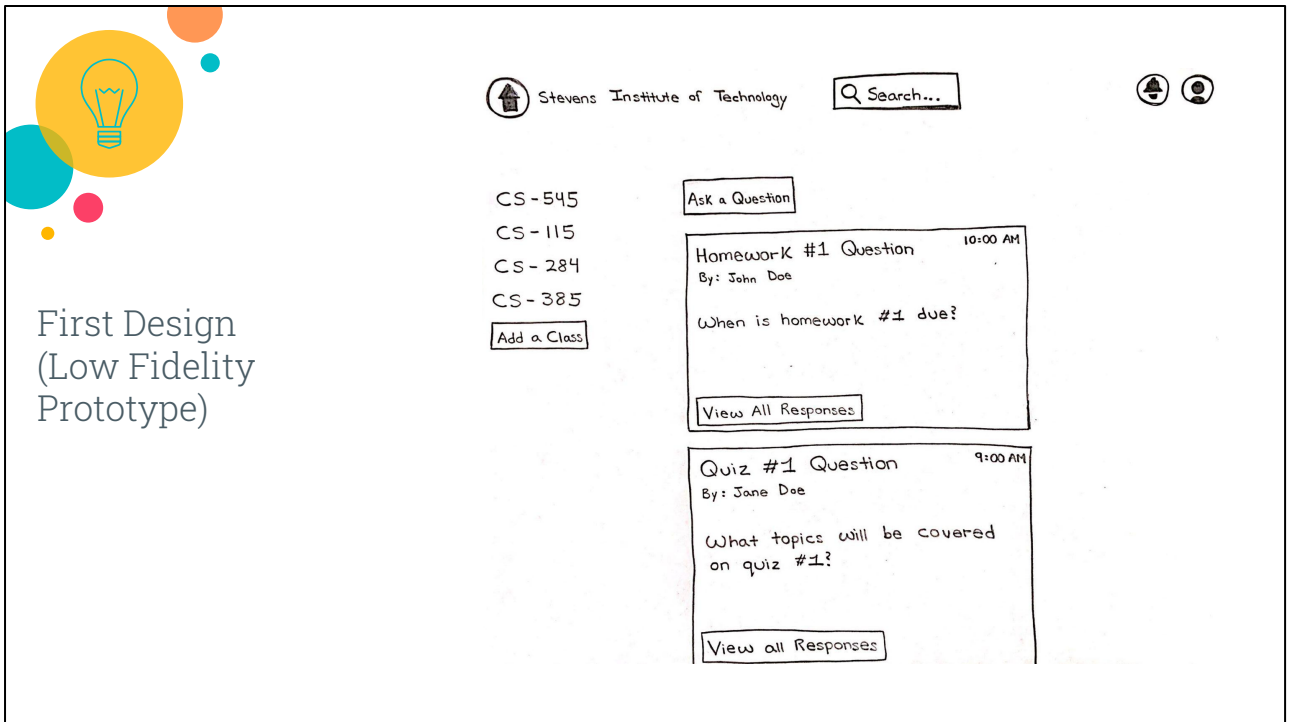


Within a few hours, Jada's question got a response a few hours later.



Jada liked how easy and simple it was to see and ask questions.

Above is a storyboard that illustrates the flow of using our website. It does not go into too much detail, but it shows the main steps of using our website (e.g., having a question, checking if the question has already been asked on the website, posting the question, waiting for a response, getting a response, etc.).

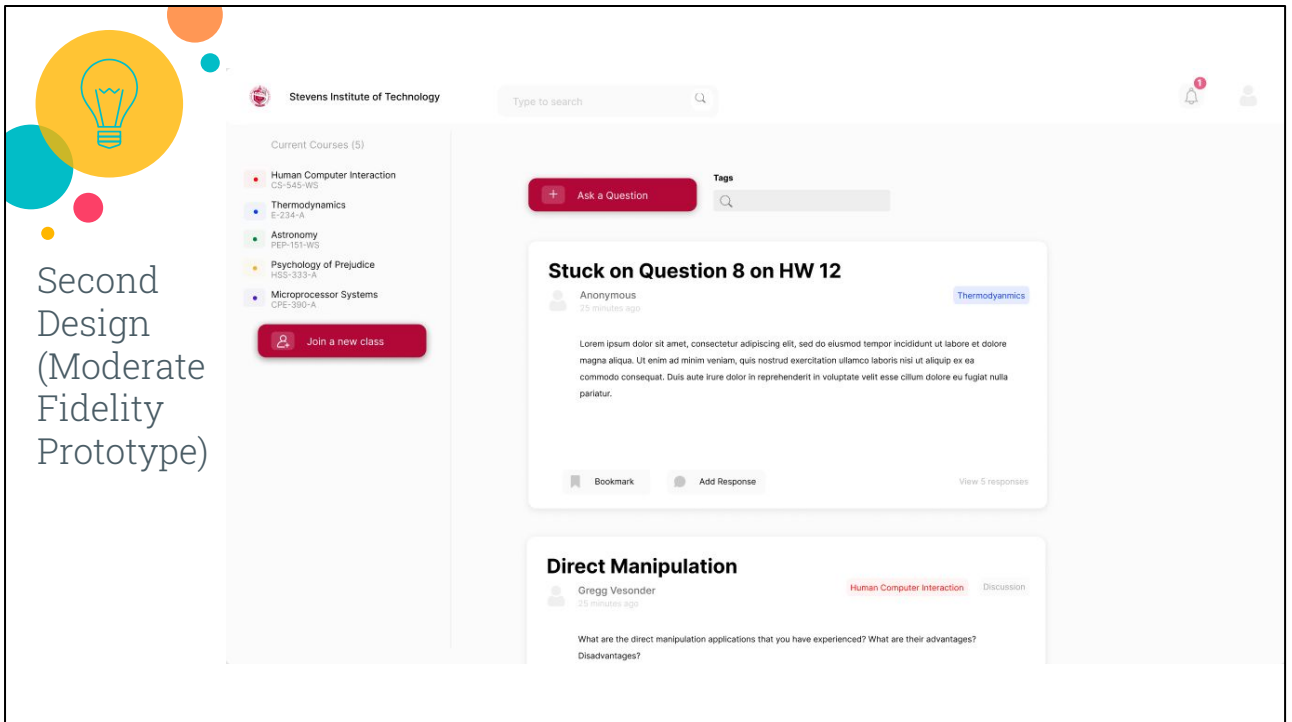


Above is a low fidelity prototype that we constructed, which acts as the first design for our website. It is hand drawn. We aimed to create a user interface that was sleek and simplistic, and only provided the features deemed necessary by our target population. Some of the key components of our first design are the home button, the search bar, the course panel, the "Ask a Question" button, and the posts themselves each with their own "View All Responses" button.

First Design User Feedback

- The paper prototype was tested on 5 users
- Users liked the intuitiveness of the location of the buttons and the icons used on them
- Users would have liked a “Post Response” button that was always visible in addition to the “View All Responses” button
- Users would have liked a tagging/filtering feature to view posts relevant to them

We tested our first design on five users and had them “do” a number of tasks such as adding a new class given a course code, posting a question, responding to an existing question, viewing all the responses to a particular question, and navigating back to the home screen. After each task, we asked for the user’s feedback. On a positive note, users thought the locations of the buttons (home button on the upper lefthand corner, etc.) were very intuitive, and the icons used on them also helped. In terms of improvements that could be made, users suggested having a visible “Post Response” button in addition to the existing “View All Responses” button to provide more clarity about what actions are possible. Users also thought a tagging feature would be helpful to find relevant posts quicker.

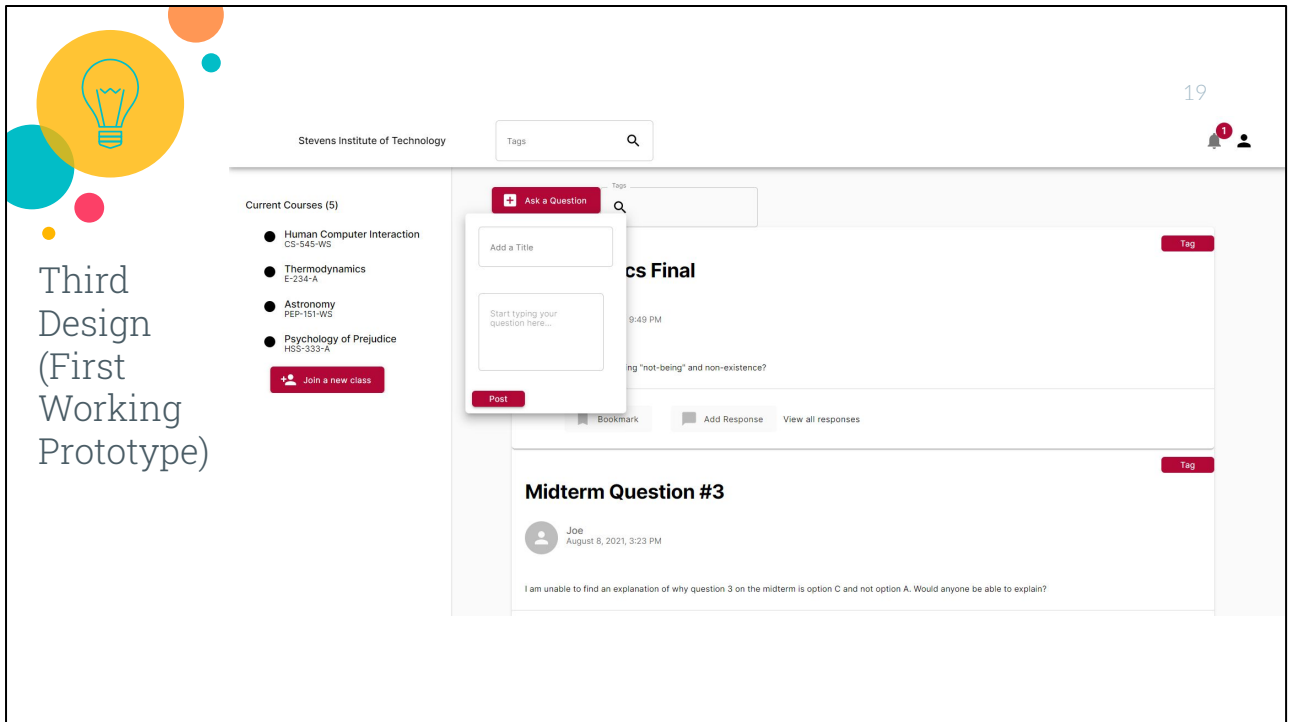


Above is a moderate fidelity prototype that we constructed, which acts as the second design for our website. In order to create this prototype, we utilized a service called Figma, which is a web-based user interface design application and prototyping tool. We took the five users' feedback from the previous iteration into consideration when creating this design. This design incorporates the suggested "Add Response" button as well as a tagging feature that helps users narrow down posts based on the course and the type of post. We also threw in a few additional features that we thought users would appreciate such as a bookmarking feature.

Second Design User Feedback

- The Figma prototype was tested on the same 5 users
- Users liked the sleek, simplistic design
- Users liked the idea of being able to bookmark certain posts
- Users were confused about the different use cases of the two search bars

We tested our second design on the same five users, had them complete the same tasks, and then asked for their feedback. In summary, users appreciated our sleek, simplistic design and thought that using our website would keep their stress levels down rather than adding to their stress. Users also liked the addition of the bookmarking feature. On the other hand, users were slightly confused about why there were two search bars. For the most part, they got the sense that one was specifically to search through tags, and the other one was more of a general-purpose search bar. However, they thought this could potentially be condensed into one search bar.

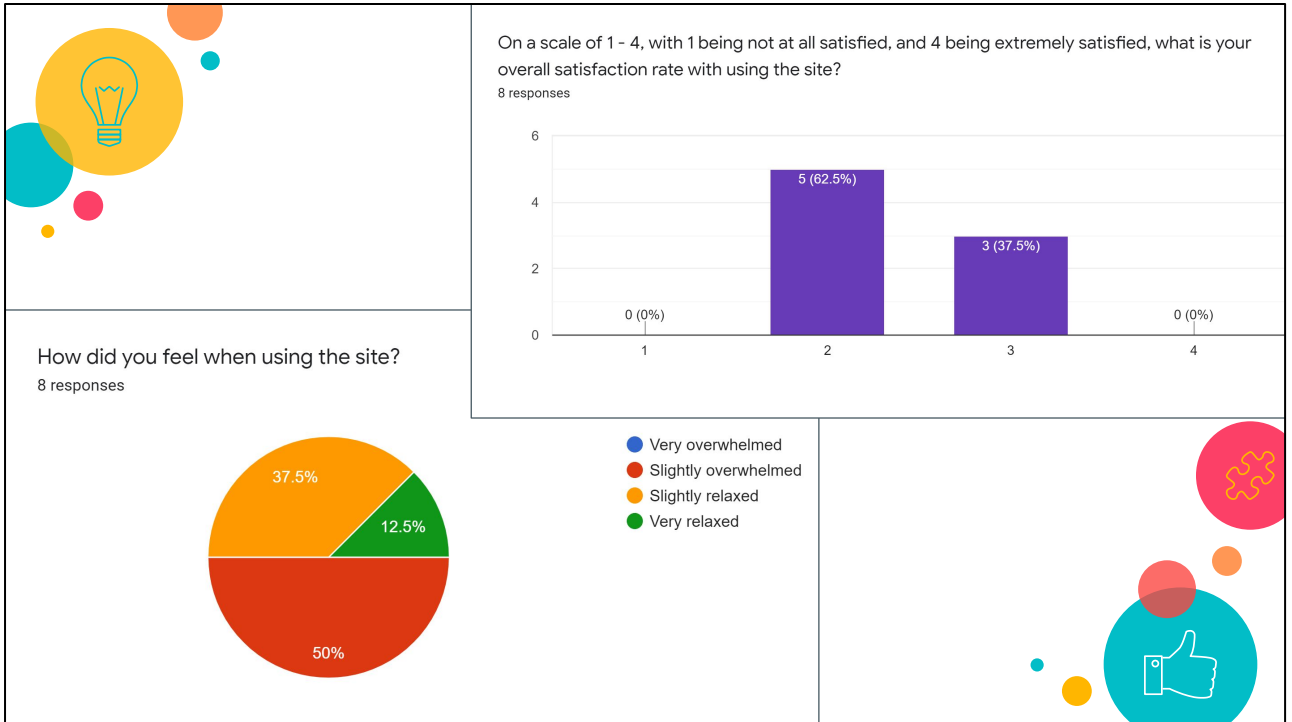


Above is our first working prototype and the third design for our website (with the low-fidelity and moderate-fidelity prototypes being our first and second designs). This screenshot illustrates what the user sees when they click the “Ask a Question” button. When the user presses this button, a small pop-up window appears, prompting the user for a title and a description of their post. For this iteration, we kept both search bars in our design, so we could ask the users more specific design questions about them and their preferences.

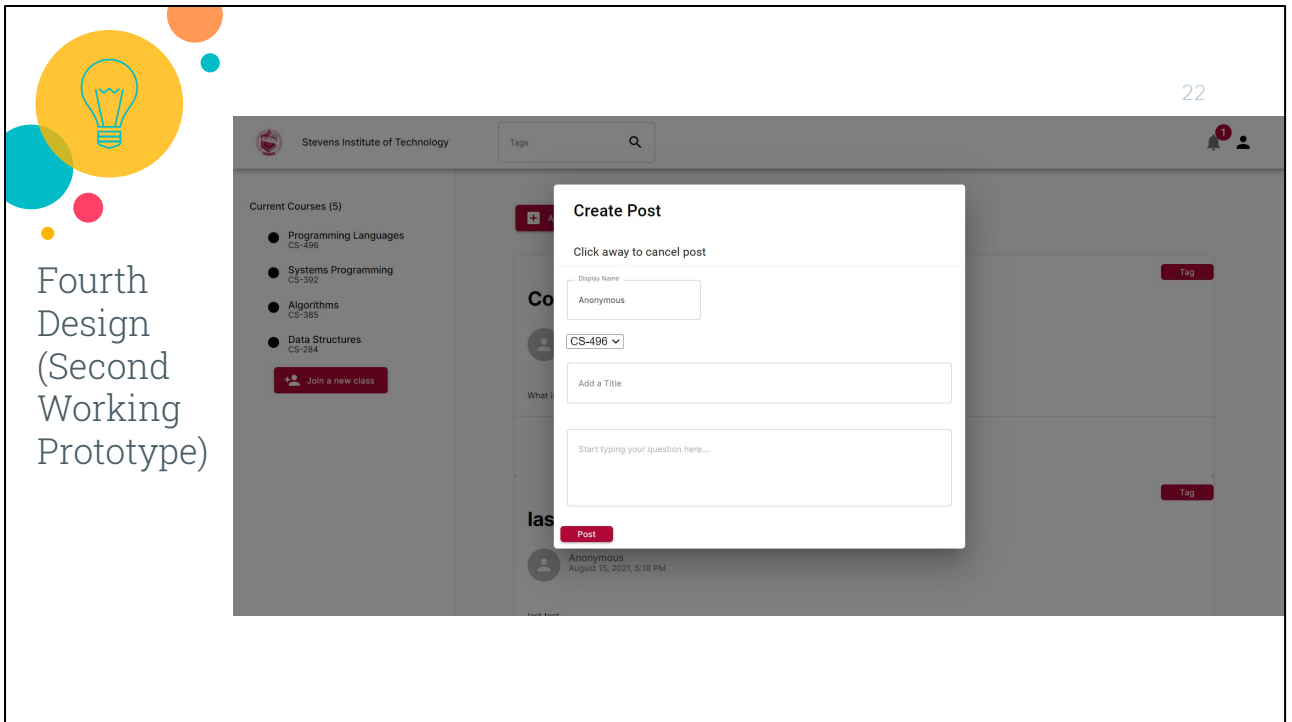
Third Design User Feedback

- The first working prototype was tested on the same 5 users in addition to 3 new users
- Users felt that the "Ask a Question" pop-up window should have been bigger
- Users wanted the "View All Responses" button to have a number in parentheses indicating how many responses there are
- Users suggested only having 1 search bar

We tested our third design on the same five users in addition to three new users, making that eight users total. We had them complete the same tasks and then asked for their feedback. The most repeated piece of advice that we received from them was that the "Ask a Question" pop-up window should be bigger, providing them with more space to type their question. A few users also suggested altering the "View All Responses" button so that it displays a number in parentheses indicating how many responses there currently are for a particular post. After the users provided their feedback, we followed up with a few more specific design questions, mainly targeting their opinions about the search bars. Again, the users suggested only having one search bar, so we planned to remove the lower search bar for the next iteration. After the testing session, we had the users fill out a brief Google Forms survey. This survey started off with questions about specific features, followed by more general questions. The following slide shows some highlights from the survey.



These charts are from the Google Forms survey that we had users users fill out after testing our first working prototype. As previously mentioned, a total of eight users participated in this testing phase. Out of the nine questions asked in our survey, the two charts above represent the results from the two questions that related most to our targeted E - engaging. To summarize, 50% of users responded that they felt slightly overwhelmed when using our website, a metric we hoped to improve by our next iteration. Additionally, the average satisfaction rate with using our website was 2.375 on a scale from 1 to 4, another metric we hoped to improve.

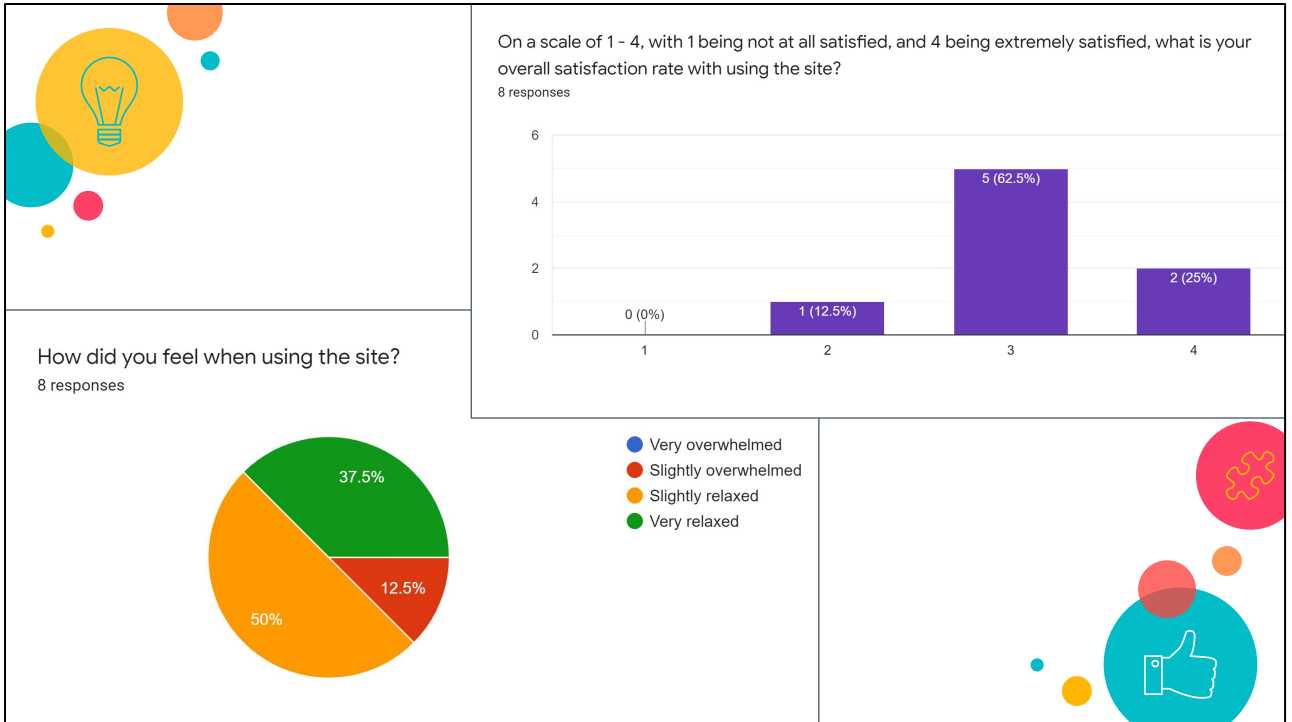


Above is our second working prototype and the fourth overall design for our website. We took the users' feedback from the previous iteration into consideration and made the pop-up window for the "Ask a Question" button significantly larger and centered it on the screen, darkening the background slightly for even more emphasis. We also added two more fields to the pop-up window, namely a field where users can choose to write their name or post anonymously (which is the default value) and a drop-down menu for users to select the course their question relates to. We also removed one of the search bars as requested. The "View All Responses" button was also altered and now has a number in parentheses indicating how many responses there currently are for a particular post.

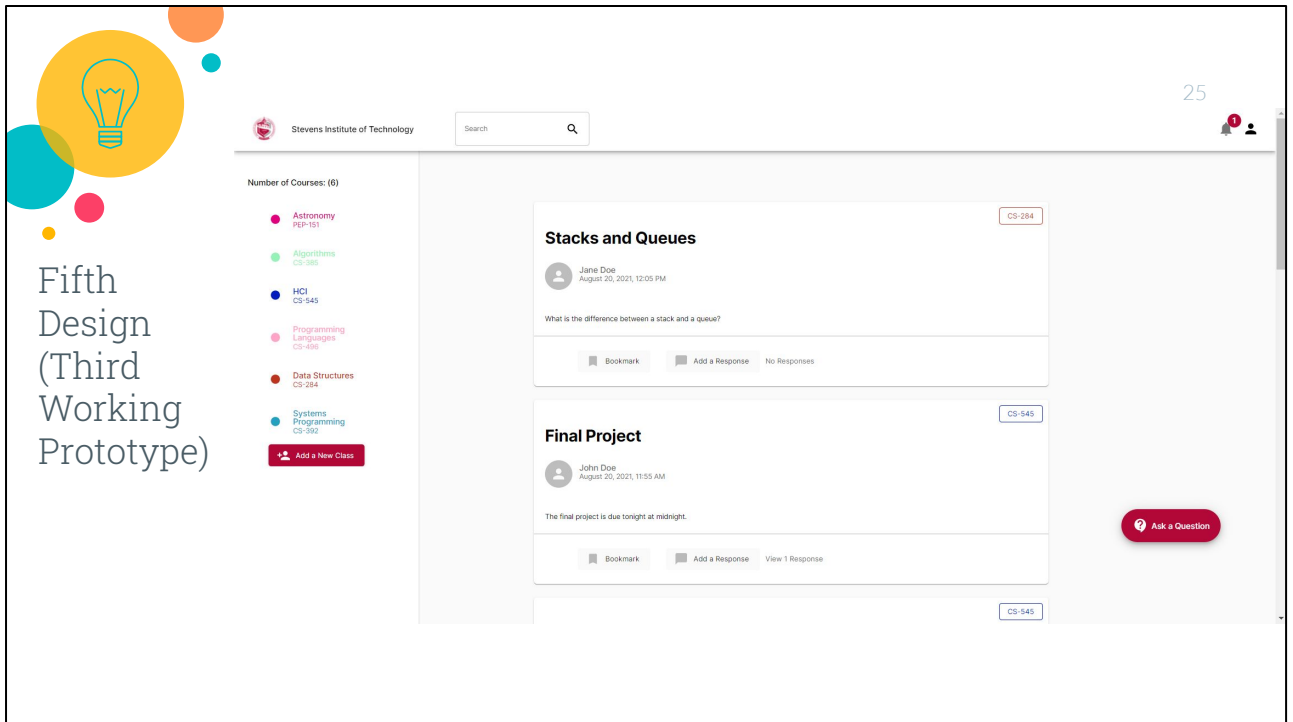
Fourth Design User Feedback

- The second working prototype was tested on the same 8 users
- Users did not realize the home button and the courses were clickable
- Users wanted color-coded courses with corresponding color-coded tags
- Users would have liked there to be more separation between posts

We tested our fourth design on the same eight users as the previous iteration. We had them complete the same tasks and then asked for their feedback. One of the users' biggest frustrations was that they did not realize that the home button and the courses were clickable. A few users also said having color-coded tags that corresponded with color-coded courses would have been nice. In terms of styling and aesthetics, a few users said they would have liked there to be more space separating the individual posts. A few other minor suggestions that were given were that we should have an X or a cancel button instead of the "Click away to cancel post" message on the "Ask a Question" pop-up window and that the "View # Responses" button should say "No Responses" if there are currently no responses to a particular post.



These charts are from the Google Forms survey that we had the eight users fill out after testing our second working prototype. The two charts above represent the results from the two questions that related most to our targeted E - engaging. Overall, only 12.5% of users responded that they felt slightly overwhelmed when using our website, an improvement from 50%. The other 87.5% of users responded that they either felt slightly relaxed or very relaxed when using our website. Furthermore, for this iteration, the average satisfaction rate with using our website was 3.125 on a scale from 1 to 4, an improvement from 2.375 from the previous iteration.

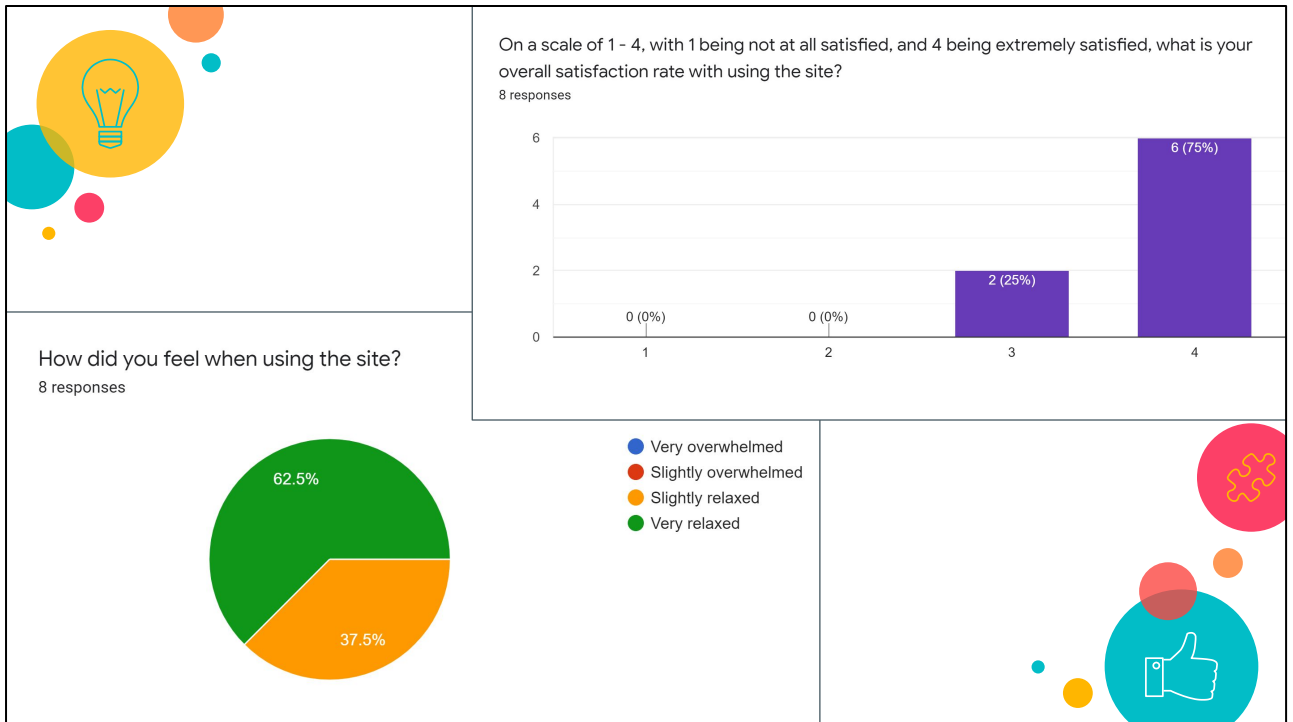


Above is our third and final working prototype and the last design for our website. As users requested from the previous iteration, we made the home button and the list of courses have more indication that they are clickable. More specifically, the cursor now changes when the user hovers over something that is clickable. Additionally, when the user hovers over the home button, a message that says “Home” appears. We also made some styling adjustments to the list of courses to further indicate that they are hyperlinks. The screenshot above also illustrates the implementation of color-coded tags that correspond with color-coded courses. There is now more spacing in between individual posts as well. Lastly, the “Click away to cancel post” message on the “Ask a Question” pop-up window was replaced with an X, and the “View # Responses” button now says “No Responses” if there are currently no responses to a particular post.

Final Data from Users

- The third working prototype was tested on the same 8 users
- Users thought the website was intuitive to use and easy to navigate
- Users better understood what actions were possible at each step with the added indications of clickability
- Users liked the color-coded courses/tags

We tested our fifth and final design on the same eight users as the previous iteration. We had them complete the same tasks and then asked for their feedback. Overall, the feedback was very positive. The users thought that the website was extremely intuitive to use and easy to navigate. They thought that all the features provided to them were necessary and that our website was not missing any crucial features. They especially liked the anonymous feature. The users also commented that they better understood what actions were possible at each step of the process with the added indications of clickability, bridging the gulf of execution and the gulf of evaluation. The users also liked the implementation of the color-coded courses and tags. If we were to do another iteration, one user suggested expanding on the “Add a New Course” feature by providing the user with a drop-down menu of all the courses offered at Stevens. Another user suggested implementing functionality that lets them remove a class from their list of available hyperlinks. A few users also thought that incorporating more color into the website would make it more visually appealing, and having more personalization and customization options would also be nice.



These charts are from the Google Forms survey that we had the eight users fill out after testing our final working prototype. The two charts above represent the results from the two questions that related most to our targeted E - engaging. Overall, 0% of users responded that they felt either slightly overwhelmed or very overwhelmed when using our website. 37.5% of users responded that they felt slightly relaxed, and the remaining 62.5% of users responded that they felt very relaxed when using our website. Furthermore, for this iteration, the average satisfaction rate with using our website was 3.75 on a scale from 1 to 4, an improvement from 3.125 from the previous iteration.



Demo Video



Above is our demo video that provides a better feel for the user experience. The demo video is approximately two minutes long and is recorded from the point of view of a college student working with our system. The user starts off on their home dashboard and then selects a hyperlink from the list of enrolled courses. The user is then taken to the discussion board for that specific course. Upon arrival, the user presses the “Ask a Question” button to post their question to the discussion board and fills out all the necessary information. The user’s post immediately populates onto the discussion board. The user then decides to help out another classmate by responding to an existing post. The user returns to their home dashboard by pressing the Stevens logo in the upper lefthand corner. From there, they decide to add another class to their list of enrolled courses by pressing the “Add a New Class” button. Lastly, the video ends with the user reading through their notifications to pass the time.

PAR Review

- Perception - Using icons that are intuitive to the user (e.g., a magnifying glass in the search bar, a bell in the notification button)
- Attention - Limiting the amount of buttons and text on the screen and only including features deemed necessary by the user
- Retention - Having a course drop-down menu so the user does not need to remember the course code for each class and making the posts visible at all times so the user always knows what question they are responding to

As we learned in class, PAR stands for perception, attention, and retention. The concept of PAR is important to consider when designing the user experience. Perception describes what the user is seeing, feeling, and thinking when using our website. The concept of attention is used to make sure the user is able to focus on the task at hand and not get distracted. Retention is all about limiting the amount of information that the user is required to remember at any step of the process. We believe our project is up to PAR for the reasons listed on the slide above and because we have been constantly considering these principles at every step of the design process and are constantly testing for usability and interacting with our end user.

Laws of Simplicity Review

- Reduce - by presenting only the most important and relevant information, the user will have a better perceived sense of control and will be less overwhelmed, which is important to stressed college students
 - Reducing the amount of information on the screen enables users to accomplish their desired tasks quicker, whether that be asking or answering a question or navigating to another discussion board
- Organize - content that is well organized appears cleaner and makes the material easier to find
 - Posts are sorted in reverse chronological order
 - Each course has its own discussion board
 - Tags are color-coded to correspond with courses

One law of simplicity that we thought was very relevant to our project was reduce. Reducing plays a major role because more often than not, education software tends to throw too many options at students, which can feel overwhelming. Not only is it overwhelming, but many students spend more time trying to figure out the software rather than actually using it. Additionally, reducing will allow users to feel more focused on their tasks. Another law of simplicity that we thought was very relevant to our project was organize. For many college students, they often feel overwhelmed when their course site is not well organized. Not only will organizing help reduce stress, but it will also reduce the amount of time spent on tasks and reduce the amount of time spent on setting up a "workspace."

Accessibility Review

- Material Design's Color Tool

Primary	Aa Large Text	Aa Normal Text
#b20838	White Text min 57% opacity	min 77% opacity
Black Text	NOT LEGIBLE ⚠	NOT LEGIBLE ⚠

- Color Blindness - having all colored buttons accompanied by icons and/or text
- Fitts's Law - increasing size of buttons

In order to ensure accessibility, we utilized Material Design's Color Tool (which can be found at <https://material.io>). Material Design's Color Tool allowed us to create color palettes for our user interface and measure the accessibility of our color combinations. The image above displays the information provided to us by the tool. We also considered those who are color blind when designing our application and made sure color was not used to convey any meaning that was essential to using our application. For example, all of our colored buttons are accompanied by icons and/or text, which helps to illustrate the meaning of each button. We also took Fitts's Law into consideration when designing our application by increasing the size of our buttons and icons.

Heuristic Evaluation

We used Nielsen's heuristic evaluation list.

1. Visibility of system status
2. Match between system and the real world
3. User control and freedom
4. Consistency and standards
5. Error prevention
6. Recognition rather than recall
7. Flexibility and efficiency of use
8. Aesthetic and minimalist design
9. Help users recognize, diagnose, and recover from errors
10. Help and documentation

We used Nielsen's heuristic evaluation list to evaluate the usability of our application. The slide above lists the ten usability heuristics provided by Nielsen. Overall, our team believes that our application performed well during the evaluation process. We considered visibility of system status by always providing the user with appropriate feedback within a reasonable time frame. For example, after a user asks or responds to a question, their post populates immediately onto the appropriate discussion board. Similarly, after a user adds a new class, that course populates onto their list of available hyperlinks. We matched the system with the real world by speaking the users' language and using icons that were familiar to them (e.g., a magnifying glass in the search bar, a bell in the notification button). We gave the user control and freedom by providing them with clearly marked exits (e.g., Xs, cancel buttons, home button) at every step of the process in the event that they click the wrong button. We adhered to consistency and standards by making sure the locations of the buttons (home button on the upper lefthand corner, etc.) were very intuitive to the user. We gave users flexibility and efficiency of use by providing them with a list of hyperlinks that take them to each of their courses' discussion boards for easy access. In terms of aesthetic and minimalist design, we used a minimalistic approach when designing an application and only provided features deemed necessary by our target population, as we discussed extensively throughout our presentation. This also enabled our system to be used without documentation. Error prevention and helping users recognize, diagnose, and recover from errors is discussed on our "Error Consideration" slide, and recognition rather than recall is discussed on our "PAR Review" slide.

Microinteractions

- Trigger - manual triggers (buttons, icons, and labels), invisible triggers (hovers and rollovers), system triggers (automated notifications)
- Rules - limiting options, having smart defaults, preventing errors
- Feedback - visual feedback (changing cursors)
- Loops and Modes - avoiding the use of modes

Microinteractions are small, and a collection of them often result in a feature. Our group paid much attention to microinteractions when designing our product because after all, every feature in our application is just a series of interactions. As we learned in class, there are four parts that make up a microinteraction: trigger, rules, feedback, and loops and modes. Triggers initiate the microinteraction, and our design makes use of manual, invisible, and system triggers. Some of our manual triggers include buttons with icons and labels on them (e.g., “Add a New Class” button and “Ask a Question” button), icons alone (e.g., notification icon and profile icon), and labels alone (e.g., hyperlinks for each course). Some of our invisible triggers include hovers and rollovers, namely the “Home” message that appears when the user hovers over the home icon and the “Cancel” message that appears when the user hovers over the X on the “Ask a Question” pop-up window. An example of a system trigger is the automated notifications. We made sure not to overwhelm the user with these notifications by logging them, so the user could review them at their convenience. It is also worth noting that we brought the data forward on the notification icon by placing the number of unread notifications on the icon. Moving on from triggers, rules determine how the microinteraction works. We aimed to limit the number of options provided to the user because fewer options and thus fewer rules often result in better and more understandable microinteractions. One way in which we limited the user’s options was by presenting the user with a drop-down menu for them to choose the course that their post related to. This prevented the user from making errors such as typing in a course they were not enrolled in. We also used the concept of smart defaults, namely having “Anonymous” as the default value and allowing the user to enter their name only if they chose to. Moving on from rules, feedback is responsible

for illuminating the rules. Most the feedback provided by our system was visual. We made sure that all user-initiated actions were accompanied by some sort of system acknowledgement. For example, after a user asks or responds to a question, their post populates immediately onto the appropriate discussion board. Similarly, after a user adds a new class, that course populates onto their list of available hyperlinks. We also used cursors for feedback and as a means of message delivery. For example, when the user hovers over something that is clickable, the cursor changes. Lastly, loops and modes represent the metarules that affect the interaction. For the most part, we tried to avoid the use of modes as much as possible to reduce confusion.

Error Consideration

- Slips - minimalistic design, clearly marked exits at every step of the process
- Description Errors - color-coded tags that correspond with color-coded courses
- Loss-of-Activation Errors - hyperlinks for each of the user's course pages
- Mode Errors - avoiding the use of modes

Although we considered all types of errors while designing our application, the types of errors that we focused on were slips, description errors, loss-of-activation errors, and mode errors. Slips occur when the user intends to do one action but ends up doing another. Because slips often result from lack of attention, we used a minimalistic approach when designing an application. The less cluttered the screen is and the fewer number of features that there are, the more likely the user will be able to concentrate on the task at hand. We also made sure we had clearly marked exits (e.g., Xs, cancel buttons, home button) at every step of the process in the event that the user clicks the wrong button. Description errors are also often due to lack of attention. One description error that we predicted the user might make is posting a question or a response to the wrong class's discussion board. We tried to prevent the user from making the error by providing additional cues such as color-coded tags that correspond with color-coded courses, so the user always knows which class's discussion board they are currently viewing. Loss-of-activation errors occur when a task has a deep chain of actions, such as having to do a certain number of actions to get to a page in a website. In order to reduce the depth of the tree, we provided the user with a list of hyperlinks that take them to each of their courses' discussion boards for easy access. Lastly, we prevented the user from making mode errors by avoiding the use of modes altogether.


Tidwell Patterns

- Safe Exploration
 - An X or a cancel button on the “Ask a Question” pop-up window and the “Add a New Class” pop-up window
 - A home button that is always visible
- Spatial Memory
 - Home button in the top left corner
 - Profile and notification buttons in the top right corner
 - Search bar centered at the top

Tidwell lists 14 patterns to describe predictable human behaviors. These patterns are important to consider when designing interfaces because interfaces that support these patterns are usually more effective in allowing their users to achieve their end goals. Some of the Tidwell patterns that we focused on were safe exploration and spatial memory. Safe exploration is about making sure the user is always able to undo or get back to their previous state. Spatial memory is about providing the user with consistent button and menu placement.



Did we improve
our targeted E?

- Yes!
 - First Working Prototype Average Satisfaction Rate: 2.375 / 4.000
 - Second Working Prototype Average Satisfaction Rate: 3.125 / 4.000
 - Third Working Prototype Average Satisfaction Rate: 3.75 / 4.000
- 

Just to reiterate, the E we chose to target was engaging, and the measure we selected to determine whether or not we improved our targeted E was satisfaction rate. We strived to make our application as engaging as possible by providing a minimalist design to prevent stressed college students from feeling overwhelmed when using our website. At the same time, we also tried to incorporate all the features deemed necessary by our target population. From the first working prototype to the second and then finally to the third, our users' average satisfaction rate increased from 2.375 then to 3.125 and then finally to 3.75 (on a scale of 1 to 4). As mentioned throughout our presentation, a large majority of users started off as "slightly overwhelmed" when using our website, and this gradually shifted to the majority of users feeling "slightly relaxed" and then eventually to "very relaxed" by the end of all our testing iterations.

Future Work

Next Steps:

- Bookmark Button Functionality
- Search Bar Functionality
- Notification Button Functionality
- Profile Button Functionality

If we were to continue on this project, our first step would, of course, be to incorporate the users' feedback from the last iteration into our design. However, our group would also like to expand on the functionality of the bookmark button, the search bar, the notification button, and the profile button. Due to time constraints, we focused all our time and energy on the main feature of our application - posting questions and responding to questions. Although we would like to continue on this project, we will most likely have to put a pause on it for the time being due to the time required to further develop this project and our conflicting busy class schedules for the fall semester.

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