

Heuristic Evaluation of [Studaudio]

For a more in-depth overview of A9, please refer to the [A9 assignment spec](#).

1. Problem/Prototype Description

Studaudio is an app that allows users to do their schooling on the go (like submitting assignments, doing readings, and taking and sharing notes) in an accessible manner.

2. Violations Found

Simple Task: Complete and submit assignment

1. H8: Aesthetic and minimalist design / Severity: 1 / Found by: A, D
 - a. Task: Simple
 - b. Description: The assignments page utilizes headings that are not much larger or bolder than the body text.
 - c. Rationale: It can require additional cognitive load for the user to decipher the different sections. Although it is still pretty clear where each section ends and begins, it is not recognizable at first glance.
 - d. Fix: Use a different text style or increase the font size of headings.
2. H11: Accessible design / Severity: 4 / Found by: A, B, D
 - a. Task: Simple
 - b. Description: The body text is quite small, including the due dates.
 - c. Rationale: Some users may not be able to easily read the current font size. Especially since due dates are important, it may then be difficult to complete assignments on time if the due date is not easily legible. This is both frustrating and limiting. The target audience is also older and they have a hard time reading small text.
 - d. Fix: Increase the font size.
3. H8: Aesthetic & Minimalist Design / Severity: 1 / Found By: A
 - a. Task: Simple
 - b. Description: The classes tab has an “other section” that is not mentioned in the README or useful towards the task flows.
 - c. Rationale: Users would get confused what this extra functionality is supposed to do when they’re using the app for the three task flows (submitting assignment, creating and sharing audio file, and converting a file to audio format).
 - d. Fix: Remove “Other” tab.
4. H8: Aesthetic & Minimalist Design / Severity: 1 / Found By: A
 - a. Task: Simple
 - b. Description: There are a lot of words going on in the header of the assignments.
 - c. Rationale: All those extra words slow the user down from finding out what really matters: their assignments.

- d. Fix: Replace “Due soon” and “You have 3 upcoming Assignments test this week” with a header that says “# Upcoming Assignments”.
5. H5: Error Prevention / Severity: 1 / Found By: A
 - a. Task: Simple
 - b. Description: Assignments exist in separated boxes where the “first read” is the huge white space of the box.
 - c. Rationale: A user may click on the wrong assignment because the first read is not apparent or miss a due date because the due date time is not obvious enough.
 - d. Fix: Increasing the font as mentioned above would definitely be helpful. Maybe bolding each assignment title can help to separate out the sections (maybe a light-weight border around each box can help to make them distinguishable from the background). Adding a (!) icon in addition to the red text for assignments that are due in less than 24 hours and keeping all the other due dates in the black font.
6. H4: Consistency & standards / Severity: 1 / Found By: A
 - a. Task: Simple
 - b. Description: Assignments have a purple “Due” tag and view has different color.
 - c. Rationale: Different colors could make the user confused of what is important. furthermore the purple tag draws the user’s eye to it when it is not the important part (the actual due date is the important part).
 - d. Fix: Changing the color to match other important items, and removing the color from “Due” completely.
7. H8: Aesthetic & Minimalist Design / Severity: 1 / Found By: A
 - a. Task: Simple
 - b. Description: Limited to no padding for phone content in the Assignment page.
 - c. Rationale: We want some white space around the content of the screen for it to be easier for the user to read the content as it’s not pushed up against the edge of the screen.
 - d. Fix: Add padding around the content of the CS 147 Assignment page.
8. H7: Flexibility & Efficiency of Use / Severity: 2 / Found By: A, C, B
 - a. Task: Simple
 - b. Description: No clear way to navigate directly back to the CS147’s Assignment page from the “Assignment 1” page.
 - c. Rationale: Users may want the shortcut of navigating directly back to the Assignments page. Let’s say they decided to work on a different assignment instead because the one they currently opened is too hard. With the current implementation they have to navigate to “classes” at the bottom, then “CS147”.
 - d. Fix: Add a “back” nav button like some other pages had. Caveat: this might get tricky as user may confuse it with going back to a previous question, however if you add the button for a previous question too at the bottom, it should be clearer that the top back button is for navigating back. To make it even clearer you can put something like “< All Assignments”

9. H11: Accessible Design / Severity: 1 / Found By: A
 - a. Task: Simple
 - b. Description: Transcription occurs as “[Transcription]” on the page.
 - c. Rationale: It’s not really apparent to the user that this is clickable, in fact I didn’t realize that functionality until I read the README.
 - d. Fix: Follow fix in number 1.
10. H6: Recognition not Recall / Severity: 2 / Found By: A
 - a. Task: Simple
 - b. Description: User cannot view their completed recordings for previous questions
 - c. Rationale: A user may want to review their recording after navigating to a different question.
 - d. Fix: Possibly add a “View” and “Record New” button when the user already has a recorded answer on file instead of the “Record” button.
11. H5: Error Prevention / Severity: 3 / Found By: A, C
 - a. Task: Simple
 - b. Description: User is only given “yes” or “no” choices to whether they want to submit.
 - c. Rationale: Users may want to review what they are submitting, save their current progress and submit later, etc. The previous page already had “submit” as the button and the user may think they have submitted the assignment when they press on that button and don’t look at the next page that actually has the “yes” or “no” to submit.
 - d. Fix: Consider having a review page and user can choose to “save” or “submit” that is navigated to with a “review” button from the last question.
12. H12: Value alignment and Inclusion / Severity: 3 / Found By: A
 - a. Task: Simple
 - b. Description: Long process to submit an Assignment that makes a user have to read a lot of stuff.
 - c. Rationale: If user is driving we want the buttons to be larger and be as intuitive as possible.
 - d. Fix: Same fix as #1.
13. H4: Consistency and standards / Severity 2 / Found by B
 - a. Task: Simple
 - b. Description: On the assignment page there is red text that later on is used to represent negative buttons.
 - c. Rationale: The red text on the assignment page is not consistent throughout the task. As later the red us used for “cancel” or “redo”
 - d. Suggestive Fix: Maybe bold information or change color.

Moderate Task: Convert a text into audio

14. H1: Visibility of System Status / 3 / Found by: C

- a. Task: Moderate
 - b. Description: In Task 2, when looking at all the readings that have been transcribed, there is no indication of reading statuses such as “To-Do, in-Progress at time xx:xx, Due, etc”.
 - c. Rationale: When Transcribing readings into audio, it can be difficult for a user to know which readings are more important, and where they were when they last left off.
 - d. Fix: It can be helpful to include visibility options in the product that allow the user to know information about their readings. A user who takes a break from listening to the audio can come back and be given information about the timestamp they left off at.
15. H6: Recognition rather than recall / Severity: 2 / Found by: A, C, D
- a. Task: Moderate
 - b. Description: There is no option to pause/begin or restart the voice recording once the user is on the “Recording” page.
 - c. Rationale: While the user is given the ability to “Cancel” in order to restart their audio recording, it requires the user to complete two additional screen clicks to get back to the “Recording” page. Not only can this get time-consuming if the user must re-record multiple times, but there is no option to pause the recording either, so users must remember what they have recorded during previous iterations. This can be frustrating as users must memorize what they want to say and successfully complete it in one take.
 - d. Fix: Allow users to restart the voice recording from within the “Recording” page. In addition, allow the users to pause the recording, listen to the recording thus far, and since pausing creates separate segments of recordings, perhaps the users can delete old segments if desired.
16. H7: Flexibility and efficiency of use / Severity: 2 / Found by: C, D
- a. Task: Moderate
 - b. Description: There is no option to filter, sort, or search the readings.
 - c. Rationale: If the course has a lot of readings, it can be frustrating and time-consuming for the user to scroll through multiple readings.
 - d. Fix: Allow users to filter, sort, and search through readings.
17. H8: Aesthetic and minimalist design / Severity: 1 / Found by: C, D
- a. Task: Moderate
 - b. Description: The readings are all grouped together, and not sectioned off in any particular order.
 - c. Rationale: It may be helpful to the user if the readings are grouped by course unit, week, assignment, or even put into additional folders for further organization. This can decrease frustration and confusion when searching for specific readings.
 - d. Fix: Allow users/instructors to separate readings based on desired criteria.
18. H11: Accessible design / Severity: 4 / Found by: A, C, D
- a. Task: Moderate

- b. Description: There is no option to both read and listen to the audio at the same time.
 - c. Rationale: Users who are hard of hearing may choose to listen to the audio version of a reading for convenience, but they may still require the supporting text. Thus, limiting users to only reading or only listening to the text may make it difficult for all users to successfully complete their assignments with the advantage of convenience that the app promotes.
 - d. Fix: Provide the text (transcription of audio) of the readings even when users are choosing to listen to the audio version.
19. H1: Visibility of System Status / Severity: 2 Found By: A, B
- a. Task: Moderate
 - b. Description: Loading symbol shows when user opens “read”.
 - c. Rationale: Users could become impatient over why it is taking so long to load the reading.
 - d. Fix: Make it transparent to the user exactly what is happening to cause the page to take so long to load. i.e. “converting file to audio format
20. H5: Error Prevention / Severity 2 / Found by: B
- a. Task: Moderate
 - b. Description: When a user tries to convert reading into audio there is no confirmation of action. And it is a very minor thing to consider, but since there is a wait time with the loading screen the user might want to confirm if that action wants to be committed to.
 - c. Rationale: Want to make sure user wants to commit to action since you can’t go back when you click “Listen”
 - d. Suggestive Fix: Add a part where you ask the user if they want to commit to action.

Complex Task: Create and share a note

21. H1: Visibility of system status / Severity: 2 / Found by: C, D
- a. Task: Complex
 - b. Description: The notes do not have time stamps of when they were created and/or last
 - c. modified.
 - d. Rationale: Users may be frustrated looking for a certain note created/modified on a certain date, since the notes do not have time stamps.
 - e. Fix: Add a consistent time stamp.
22. H1: Visibility of system status / Severity: 2 / Found by: C, D
- a. Task: Complex
 - b. Description: The “Notes” page has no indication of which course the notes are about.

- c. Rationale: The user may get confused if they forget which course they are creating notes for. It can also be frustrating and time-consuming if users have to click to previous screens to determine the course.
 - d. Fix: Add the course title to the “Notes” page.
- 23. H7: Flexibility and efficiency of use / Severity: 2 / Found by: C, D
 - a. Task: Complex
 - b. Description: Users must name the note before they begin recording their response.
 - c. Rationale: Users may prefer to complete their note before giving it a title, so it may be confusing as to why they are required to name the note first. In addition, if users are taking a note quickly, like if they are just getting their thoughts out, then it may be time-consuming to require them to title the note before they can begin getting their thoughts out.
 - d. Fix: Allow users to record an audio note even if they have not named the note. If the users fail to title the note after recording, they can be prompted with an error message or the note can be saved as “Untitled X,” where X denotes the number of untitled notes thus far.
- 24. H7: Flexibility and efficiency of use / Severity: 2 / Found by: C, D
 - a. Task: Complex
 - b. Description: There is no option to filter or search the notes, and the newly created note automatically goes to the bottom of the list (likely due to alphabetized sorting).
 - c. Rationale: It can be time-consuming and frustrating for users to find a specific note if they have a lot. It can also make it difficult to find the note they have just created, as not only will they have to search for the new note, but also remember its name since the notes do not currently have time stamps.
 - d. Fix: Allow users to filter their notes, search either based on note titles or note content, and sort the notes.
- 25. H3: User Control and Freedom / Severity: 1 / Found By: A
 - a. Task: Complex
 - b. Description: User can name the note when creating a new note
 - c. Rationale: User might have had a typo in the note title and it’s not apparent if there’s a way to edit it if it’s already been named
 - d. Fix: Add an edit icon next to the name for users to edit the name if they made a mistake or want a new name
- 26. H4: Consistency and Standards / Severity: 1 / Found By: A
 - a. Task: Complex
 - b. Description: This page shows a little “play” button in transcripts.
 - c. Rationale: The assignment’s recording page didn’t have this functionality which could cause users to be confused why one offers it and the other doesn’t.
 - d. Fix: Add a playback button on the Assignments page or remove the standalone playback recording in the share audio notes page

All Tasks

27. H2: Match between system and the real world / Severity: 4 / Found by: A, D
- Task: All tasks
 - Description: The affirmative action buttons (Yes, Next, Submit) are on the left, and the dismissive action buttons (No, Cancel) are on the right.
 - Rationale: Users will likely be used to having the affirmative action buttons on the right, progressing toward the end goal, and the dismissive action buttons on the left, bringing them back toward the previous step. This is common across other applications, so it is instinctual. It may be confusing and cause users to misclick if the buttons are reversed.
 - Fix: Place the affirmative action buttons on the right side, and the dismissive action buttons on the left side.
28. H4: Consistency and standards / Severity: 1 / Found by: A, D
- Task: All tasks
 - Description: Some buttons utilize capitalized lettering while others don't.
 - Rationale: This is more of a visual consistency issue. Since the button capitalizations are not consistent, it can create confusion as to whether differences in capitalization indicate different levels of importance or functionality. This adds extra cognitive load for the user, and in general, may cause the user to perceive the app as containing design flaws or being unpolished. (*In particular, the "SAVE" button when recording an audio response to an assignment is different from the "Save" button when creating a new note.*)
 - Fix: Maintain the same capitalization patterns across all buttons, or if certain buttons are indeed more significant, then consistently maintain capitalization for those only.
29. H4: Consistency and standards / Severity: 2 / Found by: D
- Task: All tasks
 - Description: The microphone icon to record and the microphone icon in the bottom bar are of very different styles.
 - Rationale: Users may get confused when they see two different icons, and whether they denote different types of recordings. In addition, the microphone in the bottom bar is supported with the text "Quick Record," so this may imply quickly creating a note, but the user may not be aware unless they are already familiar with the app.
 - Fix: Use the same microphone icon in both locations.
30. H4 Consistency & Standards / Severity: 1 Found By: A
- Task: All Tasks
 - Description: There seems to be a lot of different fonts on with serif fonts, versus sans serif fonts and inconsistency in capitalization i.e. "Welcome back!", "Sign Up", "SIGN IN", and "Sign In with [platform]."

- c. Rationale: Having small inconsistencies like this degrades the user experience and makes them confused of whether they're still in the same app.
 - d. Fix: Use the same font style and capitalization for all. If you want to make "SIGN IN" stand out more, consider more white space around it. Choose a color scheme for all pages so the app looks cohesive.
- 31. H4 Consistency & Standards / Severity: 1 Found By: A, D (mentioned in summary)
 - a. Task: All Tasks
 - b. Description: There's also inconsistency with the color scheme across different pages". i.e. very colorful classes page and not colorful task flow pages.
 - c. Rationale: Different color schemes makes the pages look like they're from different apps.
 - d. Fix: Choose a color scheme for all pages so the app looks cohesive.
- 32. H4 Consistency & Standards / Severity: 3 / Found By: A, B, C, D
 - a. Task: All Tasks
 - b. Description: Alignment of buttons and texts are inconsistent across screens.
 - c. Rationale: Having small inconsistencies like this degrades the user experience since it's less aesthetically pleasing and makes it slower for a user to navigate
 - d. Fix: Either left align all text or center all the text in the headers, align elements so the same one on different pages are consistent .
- 33. H11. Accessible Design / 3 / Found by: C, B
 - a. Description: Overall throughout the Medium-Fidelity Prototype, there are some portions where the font is small and can be difficult for users who are visually impaired to read,
 - b. Rationale: This makes it difficult for a user who has visual impairments to read and navigate the application
 - c. Fix: Make the font bigger or give the product an accessibility function to increase font size.
- 34. H11. Accessible Design / 3 / Found by: C, B
 - a. Description: Overall throughout the Medium-Fidelity Prototype, there are some portions where the font is small and can be difficult for users who are visually impaired to read,
 - b. Rationale: This makes it difficult for a user who has visual impairments to read and navigate the application
 - c. Fix: Make the font bigger or give the product an accessibility function to increase font size.
- 35. H3. User Control and Freedom / 2 / Found by: C
 - a. Description:Overall when listening to a note you made, there are no features that allow the user to manipulate playback speed.
 - b. Rationale: This makes it difficult for a user to listen to their notes effectively. A user could listen to their voice notes in the car but not want to listen at normal pace.
 - c. Fix: Add more user control to the product and play the recording faster or slower, and makes skipping easier.

Other

36. H1 Visibility of system status / Severity: 2 / Found by:
- Task: Other (Signing in)
 - Description: The “SIGN IN” button is not an actual button.
 - Rationale: Users may be confused as to whether they press the phrase “SIGN IN” to sign in, or if the phrase is to indicate the sign in options below the username and password area. This may also make the user think they cannot sign in with solely their username and password.
 - Fix: Either make the “SIGN IN” a button as well, or underline the text like how “Sign Up” is underlined.
37. H2 Match between system and the real world / Severity: 2 / Found by:
- Task: Other (Signing up)
 - Description: The button to login with Canvas has red lettering. The buttons to login with Google and Apple have black lettering, despite Google also having a colorful logo.
 - Rationale: Since the red lettering for the Canvas login is the only color on this screen, the user’s attention is most likely going to be drawn to this button. However, since red typically denotes “bad,” the user may be confused about whether signing in with Canvas is preferred or not.
 - Fix: Change the lettering to black even though Canvas had a red color theme.

3. Summary of Violations

A Google Sheet Template is provided [here](#) to help you calculate numbers.

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
H1: Visibility of Status	0	0	4	1	0	5
H2: Match Sys & World	0	1	0	0	1	2
H3: User Control	0	1	1	0	0	2
H4: Consistency & Standards	0	5	2	1	0	8
H5: Error Prevention	0	1	1	1	0	3
H6: Recognition not Recall	0	0	2	0	0	2
H7: Efficiency of Use	0	0	4	0	0	4
H8: Minimalist Design	0	5	0	0	0	5
H9: Help Users with Errors	0	0	0	0	0	0

H10: Help & Documentation	0	0	0	0	0	0
H11: Accessible	0	1	0	2	2	5
H12: Value Alignment & Inclusion	0	0	0	1	0	1
Total Violations by Severity	0	14	14	6	3	37

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)

4. Evaluation Statistics (in %)

Severity / Evaluator	Evaluator A [Marie]	Evaluator B [David Castro]	Evaluator C [Ashton]	Evaluator D [Jailia Yang]
Sev. 0 Ex: Eval A count / total sevs 0 in table #3	0%	0%	0	0
Sev. 1 Ex: Eval A count / total sevs 1 in table #3	100	42.85714286	14.28571429	35.71428571
Sev. 2 Ex: Eval A count / total sevs 2 in table #3	57.14285714	42.85714286	92.85714286	85.71428571
Sev. 3 Ex: Eval A count / total sevs 3 in table #3	50	50	83.33333333	66.66666667
Sev. 4 Ex: Eval A count / total sevs 4 in table #3	0	0	0	133.3333333
Total (sevs. 3 & 4) Ex: Eval A = sum(sev 3: sev 4 counts) / sum(sev 3: sev 4 in table #3)	33.33333333	33.33333333	55.55555556	88.88888889
Total (all severity levels) Ex: Eval A total sev count / total sevs (green cell) in table #3	67.56756757	40.54054054	56.75675676	67.56756757

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

5. Summary Recommendations

We can really see the value of the project for people who need easy access to their assignments and course material. Overall the app was really easy to navigate. It was also pretty apparent which page it was at so good job on surfacing the state of the app at each point!

One big trend we noticed is the lack of focus on H4: Consistency and Standards and H11: Accessible Design of your app. A lot of the fonts, alignment, color schemes, etc are inconsistent

across the app making it look like the pages are part of different applications. Making these consistent across all the pages would boost the overall user experience even if there are not changes to content/functionality. We would also suggest making sure you have some kind of margin between your screen content and the edges of the screen that would make it easier to read and interact with your app. Another big thing that we think would add a lot of value to the app is being able to save the progress of an assignment so you're not left with the black and white choice of submitting an assignment or not. This might already be in your design but from the prototype it is not very apparent. Finally, as one of the target audience for the app is people learning on the go/commuting, we would suggest streamlining the submitting an assignment task as it is more of a lengthy process and doing things like auto playing the question when navigating to it, automatically re-recording on "redo" and adding a "previous" button to go back to the last question for faster navigation would make it easier for people on the go/commuting. This doesn't really fit into the violations but we were thinking that having some sort of calendar representation of assignments and upcoming tests would be super valuable for people who are more visual.

Great work with the prototype and having clear tasks and we're looking forward to seeing the final product!

Severity Ratings

- 0 - not 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

- Words, actions, and UI elements should be consistent across the entire platform
- Follow platform and industry conventions

H5: Error Prevention

- Minimize error-prone conditions
- Remove memory burdens, support undoing, and warn your users when necessary

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, keyboard shortcuts)
- Allow users to tailor frequent actions (e.g., macros)

H8: Aesthetic & Minimalist Design

- No irrelevant information. Focus on the essentials.

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

H11: Accessible

- Users can interact with the system using alternative input methods.
- Content is legible with distinguishable contrast and text size.
- Key information is upfront and not nested for screen readers.

- Purely visual or auditory content has text-based alternatives for users with low vision and low hearing.

H12: Value Alignment and Inclusion

- The design should encode values that users can understand and relate to.
- It should make a diverse group of users feel included and respected.
- The design should prevent the reproduction of pre-existing inequities and not create additional burdens for members of disadvantaged populations.