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CS 147

Heuristic Evaluation on team "LearnUp"

This prototype is an education application with clear goals for three targets: make students in early ages to be engaged in academic materials outside the classrooms, allow parents to be involved in their children's academic progress, and provide teachers new means to provide academic materials to their students.

Report

I have divided the reports into three sections, each for the targets: students, parents, and teachers.

    I.   Task 1: Students

[H2-1 Visibility of Status] It is not clear for whom the screen is for, whether it is for the students or the parents. It is crucial to have separate screens for each target, because having to share the same screen while the child is playing greatly limits the parent's ability to check upon their child's academic progress. Also, the "My Tasks" button and the "Search" button are on the same screen, but reading through the directions under each button, I realized that "My Tasks" is aimed specifically for the students, and the "Search" button is specifically for the parents. Rather than having one page for two different groups, it is better to have separate screens for students and parents.

[H2-3 User Control & Freedom] If the student mistakenly presses "Accept" for one of the tasks, is there a method to cancel the task and return to the home screen? It would be great if we could see how the task would be performed, and if the students can get out of a task once it started.

[H2-4 Consistency & Standards] What is the scoring algorithm? Yes, the students should take a picture of their work and submit it. Are points given for submission, or evaluation of the work? If it is evaluated, what are the standards? Students should not have to wonder how the score is given. It should be clear in the README file, or perhaps in a help-documentation inside the app.

[H2-4 Consistency & Standards] The tasks under the "My Tasks" have different sizes. Why are they different? Do bigger sizes represent more importance, or are they completely random? There should be a consistency in how the sizes of the tasks are decided, perhaps by difficult of the tasks. The teacher could specify how hard a task is, and the size of the "planet" inside the "My Tasks" could represent that.

[H2-5 Error Prevention] Why is the settings tab in middle of the top of the screen? Remember that the main target users are students from kindergarten to 6th grade, as the

application specified. Their hands are small, and it would be hard for them to reach up the screen to press anything. In certain circumstances, they may press wrong buttons. Functions that may be often used, such as settings, should be at the sides or the bottom of the screen for the young users to easily access.

[H2-5 Error Prevention] After the first screen, why is the Home button at the middle of the top of the screen? There may be reasons for keeping these buttons at the top of the screen, but this is not apt for apps for children. The home button should be at the sides or the bottom of the screen for them to easily press.

[H2-5 Error Prevention] At the very first screen, at the middle of the top of the screen sits the settings button. All the other screens have the home button at the same exact position. This can be very confusion for the users. They may click the home button twice by accident, and rather than returning to the home screen, could end up in a settings page. Rather than expecting the users to always accurately press the home page once, simply have the settings button in a different location.

[H2-6 Recognition not Recall] The earth button is the home button, but the users who use the app for the first time could not have known that. Have a small message that reads, "Return to Earth!" to represent the functionality, or make it more explicit.

[H2-7 Flexibility & Efficiency of Use] Why is there a settings button in every page? This means if users want to change a specific setting in a specific page, they need to first browse through the pages to reach the specific one, and then go into settings to change what they wish to. Rather, have all the settings for all the screens in a single settings tab. I recommend having all of the settings in the very first home page.

[H2-7 Flexibility & Efficiency of Use] The README file did not talk about why the users need to take a picture of their work every time at the end of an activity. Could there be a way to make it faster for the experienced users? To answer this question, we need to look at why we need to take a picture at the end, which is not clear. Here, I decided to diagnose for each of the possible scenario:
1. Teachers are scoring the photos manually
   In this case, there is another [H2-9 Help Users with Errors]. The user may not know how the picture should be taken. There will often be cases when the photos are not taken as they should be, and the users should be prompted with the appropriate error for such case.
2. Pictures are uploaded to social media
   In this case, there is another [H2-10 Help & Documentation]. The user should know how they should take the photos, which was not very clear.

[H2-7 Flexibility & Efficiency of Use] One of the goals of this app was to allow parents to look at their children's academic progress. However, as of so far this application fulfills that in an inefficient way, by making the parent have to take their children's phones and look at the screen rather than allowing them to check upon them from their own phone. The

connection is very minimum or one-way from parents to children, and this can be improved for more experienced users.

[H2-8 Aesthetic & Minimalist Design] Under the "Progress" section, there is a small chart-shaped icon at the bottom right side that does not have any function. Dialogues should not have information that is not used or needed.

[H2-8 Aesthetic & Minimalist Design] The task planets are too big for phones with small screens. What happens when there are so many tasks that they fill the entire screen? Design is important, but the visibility is more important. There should be an option for the students to choose how many tasks they want in one screen, or how big the tasks should be.

[H2-9 Help Users with Errors] The search box under the "Search" section is not clear. It waits for an input from the user, but the users do not know what to put in there exactly. Also, if the input is invalid, there is not a clear error message that prompts the users exactly what they have done wrong.

[H2-10 Help & Documentation] Under the "Search" section, the documentations are aimed for the parents (specifying "you and your child"), and under the "My Tasks" section, the documentations are aimed for the children (specifying "you and your parents"). This is done under one screen, and the documentations are unclear whom they are targeting. The screens should show different documentations for different targets.

[H2-10 Help & Documentation] At the end of a progress, it is not clear how the picture should be taken. Is a picture required after every progress of completing a task, or only at the end? The users are elementary students, so this should be clearer. They should be given a clear guideline for every step on how they should take the pictures.

II.   Task 2: Parents

[H2-1 Visibility of Status] It is not clear from the home page whether it is for the students, or for the parents. Since the "My Tasks" and the "Search" target these two different groups, it should be clear in the home page for which it is for, and have specific pages designated for each group.

[H2-1 Visibility of Status] The parents have the ability to save tasks for their children. How are these saved tasks different from those that are assigned by the teachers? There does not seem to be a mechanism to track the difference, which would confuse the students. There should be a design difference or a separate home page for the saved tasks.

[H2-3 User Control & Freedom] After clicking "search" under the "Search" section, the parents are directed to a page with a list of tasks and a search box at the top. The "change filter" function is clear in allowing the users to change their mistakes in the parameters, but

the search box is unclear. Does it perform another search in the tasks that are already found, or does it provide an exit function for the user? The use of the search box should be made clearer for allowing the users to fix their errors.

[H2-3 User Control & Freedom] Parents may accidentally press "Save Task" button, but there is no way for the student to remove the saved task. In fact, it is not clear where the saved tasks would go in the first place, but assuming that they go under the "My Tasks", the application should provide a means for the user to erase the accidentally saved tasks, by simply adding a "delete" function in the "My Tasks".

[H2-4 Consistency & Standards] In the "My Tasks" tab, students start a task by clicking "Accept". In the "Search" tab, parents start a task by clicking "Begin". The names should be consistent if they do the same action.

[H2-5 Error Prevention] The "change filter" option is way to small. It is between the search box and the list of tasks, and it is difficult to expect the users to always have the precision to press the small button, where a small miss would prompt the user to another directory. The "change filter" should be made bigger.

[H2-6 Recognition not Recall] This goes along with the above error. It is not clear what the search box is supposed to do, and it should be made clearer to the users.

[H2-7 Flexibility & Efficiency of Use] Why is there an option to select grades? This should be intertwined in the settings tab, because the user would not have to fix their grade years very often. Having this in an open screen would make the average-day activities inefficient.

[H2-7 Flexibility & Efficiency of Use] One of the goals of this application was to facilitate communication between parents and their children. Rather than sharing the screens in one phone with their children, parents should be able to access their children's progress through their own phone, but there was no room for the experienced user to quicken their process.

[H2-8 Aesthetic & Minimalist Design] Having two search boxes in separate pages is redundant. Since there already is a "change filter" option, it is better to have only one search box in one page.

[H2-9 Help Users with Errors] What happens when the search result is null? What error message is prompted to parents? There are several edge cases, but they were not covered in the prototype.

[H2-10 Help & Documentation] How can parents send tasks to their children? True, if they are sharing the screen with their children, then this functionality is not needed. However, if they are to

[H2-10 Help & Documentation] The "settings" tab is not implemented, which is critical. How would the users change their names, how would they be connected to their teachers to receive the tasks, and how would the parents access their children's academic progress? Without any help or documentation on how these may be done, it is hard for the users to find them. Implement a settings page and documentations to help the young students find what they need to find easily.

III.   Task 3: Teachers

[H2-1 Visibility of Status] There are messages on the status board at the very first screen, but what kinds of messages are posted is unclear to the user. As of right now, it is just a sea of unorganized information, and it would be hard for the teachers to fully grasp the information. I would rather put them in a "Roster" section where it is more organized.

[H2-2 Match Sys & World] The system seems to have its own way to organize the tasks under the "My Assigned". They are mixed in the user's perspective. It would be better for the users if they were ordered in alphabetical order.

[H2-3 User Control & Freedom] The app allows the users to sort the tasks by due date, but it was unclear what other categories existed for the user to sort. This is a prototype, but it would be great if I could know what other categories existed.

[H2-4 Consistency & Standards] The home screen is still the earth button for the teachers. This button was consistent for the other screen, which had the space as the background. For this screen, the context does not exist, so the earth button seems out of context.

[H2-4 Consistency & Standards] The colors are not consistent. At the very first home screen, the "Task" and "Roster" are hot blue, but once inside the "Task" button, the color was sea-blue. It would be better if the use of colors were consistent.

[H2-4 Consistency & Standards] With the use of vivid images for the wall photo for each screen, there is too much color in each page. It would be better if the colors for the wall photos were toned down, because too much color distracts the user from the main content.

[H2-5 Error Prevention] The "New Tasks" tab under the "Tasks" needs resizing. Right now, the space between the tabs, the search box, and the tasks are too small, so if the teachers want to press the search box, it is harder for them to do so without much attention. They could easily press one of the tasks instead.

[H2-6 Recognition not Recall] What is the difference between "Create" and "New Task"? Does the "New Task" show all the tasks that had been recently created by the teaching fellows? It is not clear the difference between the two tabs, and what the "New Task" tab is trying to achieve, so I would either make the names more clear or the contents more explicit.

[H2-6 Recognition not Recall] In the "My Assigned", there are many tables. In each table, I do not know what each column is supposed to represent. Make it clearer for users, so that they do not have to infer what they mean.

[H2-7 Flexibility & Efficiency of Use] The "Description" box under the "Create" tab is too small for phones with small screens. I would rather have a small box, very much like a search box, and when clicked, expand to show the content to save more space and make it more efficient to use.

[H2-7 Flexibility & Efficiency of Use] The settings tab exists for all the screens. It is more efficient for the users if there is a single designated settings tab where they can fix all the settings about all the screens, rather than having to go to each page to set the settings.

[H2-8 Aesthetic & Minimalist Design] The back button is hard to see in the given wall photo. Blue is hard against green background, so I recommend having a thin layer of white around the words to make it visible in any background wall photo.

[H2-8 Aesthetic & Minimalist Design] When the users first open the app, they are greeted by a long list of status from the students. I believe it is better to have them in the "Roster" page, and keep the home page clean to make it more welcoming for the users.

[H2-9 Help Users with Errors] There isn't a search button or the filters like the children's search screen, and the user may not be prompted what they have searched wrong. It would be great if they could be notified of what they searched, and also more freedom to perform the searches.

[H2-10 Help & Documentation] It is not clear how the teachers would create a task for the students. In the students' screens, the documentations for the same task are different in the "My Tasks" and the "Search". Teachers need to input two different documentations, but the "Create" tab only specifies one description. Also, exactly how the tasks are created is vague. Are the students expected to make their own tools offline and take photos of them, or are the activities created through the app? If the latter, how much flexibility is provided for the teachers? There isn't enough documentation for these factors.

Summary

Category	# Violations
[H2-1: Visibility of Status]	4
[H2-2: Match Sys & World]	1
[H2-3: User Control & Freedom]	4
[H2-4: Consistency & Standards]	6
[H2-5: Error Prevention]	5
[H2-6: Recognition not Recall]	4
[H2-7: Flexibility & Efficiency of Use]	7

[H2-8: Aesthetic & Minimalist Design]	5
[H2-9: Help Users with Errors]	4
[H2-10: Help & Documentation]	6
Total Violations	**46**

Category	Task 1	Task 2	Task 3	Total
[H2-1]	1	2	1	4
[H2-2]	0	0	1	1
[H2-3]	1	2	1	4
[H2-4]	2	1	3	6
[H2-5]	3	1	1	5
[H2-6]	1	1	2	4
[H2-7]	3	2	2	7
[H2-8]	2	1	2	5
[H2-9]	2	1	1	4
[H2-10]	3	2	1	6
Total	**18**	**13**	**15**	**46**

Recommendations

As I used the app, I got the impression that it was neatly made, and I could see that the app designers have thought a lot about what they wanted to have on each page. It was a pleasure to go through the prototype. There is room for improvement, however, like strengthening the network amongst students, parents, and teachers, and making a new page designated for the parents. This is one of the reasons why the task involving the students showed the biggest number of heuristic violations, because I felt like the student task tried to incorporate what should have been a completely separate screen for parents into the same screen. Also, In general, [H2-4: Consistency & Standards] and [H2-10: Help & Documentation] were the most common heuristic violations amongst the three tasks. These two are intertwined closely so that if one is fixed, the other may also be corrected in the process. Some of the process required documentations because it was vague what the user would achieve by going through the process. If they were consistent with the other pages, then the documentations would not be needed, and many of the errors would be diminished. Another common violation was the [H2-7: Flexibility & Efficiency of Use]. Many of the pages or buttons could be combined in a single page to provide the user a cleaner, more efficient page that brings together the functions that are scattered across the app, which would decrease the number of heuristic violations. One of the biggest benefactors would be the settings page.