

LoopedIn Lo-fi Prototype Report

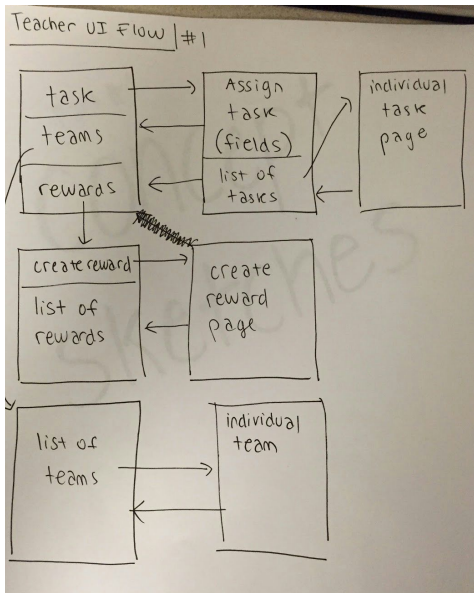
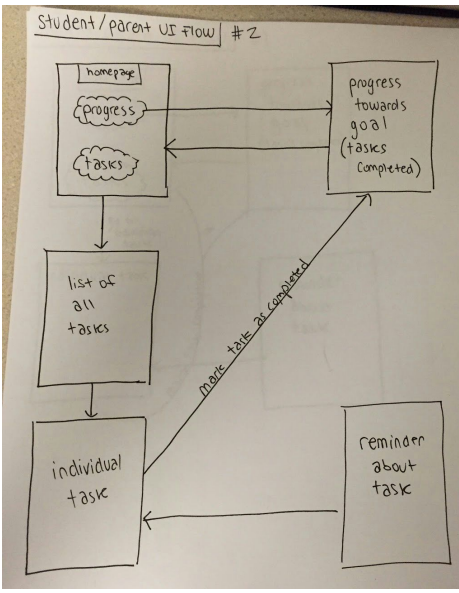
Maddy B - record keeping and results reporting
Rachel G - primary artist for storyboards and sketches
Simone J - prototype testing lead

Introduction

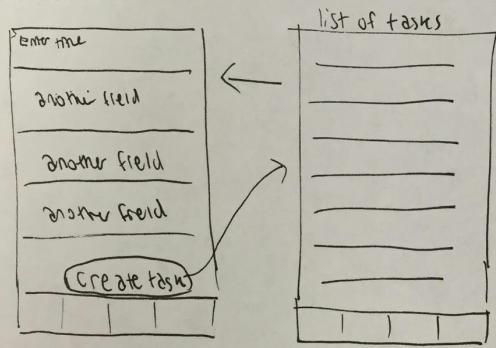
We are LoopedIn (“Fostering teamwork between students, parents, and teachers”), and our mission is to help facilitate communication between parents, students, and teachers by making them a team with the student at the center. In our needfinding process, we found that the communication that occurs between teachers and parents is almost exclusively adversarial, and that parent-student communication is often lacking in many ways as well. To address this problem, our service will provide a way for teachers to create tasks that students and parents complete to earn points as a team. With enough points, student-parent teams can redeem rewards created by the teacher. Originally, our target audience was low-resource communities, but we have realized that this problem, while amplified in low-resource communities, is actually a phenomenon that occurs across all levels of income. So, at this point in our research we have expanded our target audience to students, parents, and teachers of grades 6-10.

Sketches

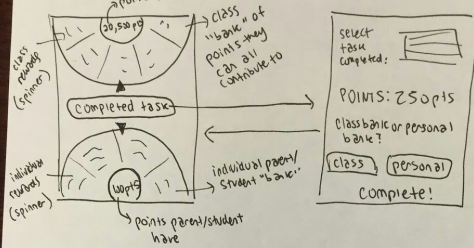
Concept Sketches

	
Concept Sketch Series #1 - Teacher/iPhone	Concept Sketch Series #1 - Student/Parent/iPhone

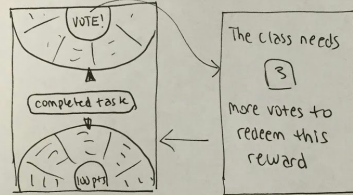
teacher concept sketch #2



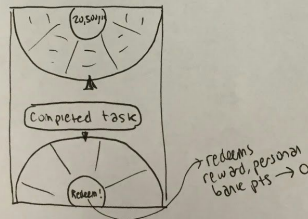
Concept sketch - Parent/Student #3 / includes community aspect



When class has enough pts for a reward...



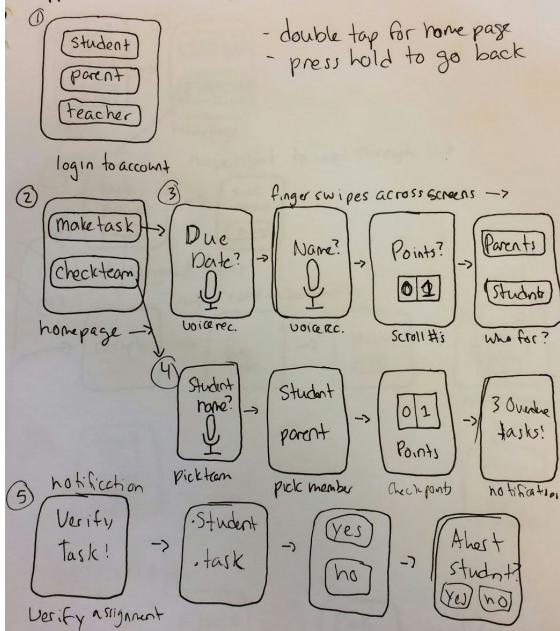
When the parent/student have enough pts for a reward...



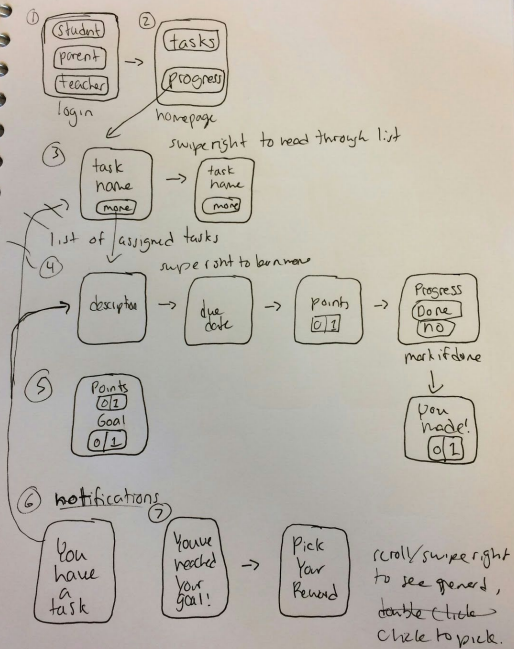
Concept Sketch Series #2 - Teacher/ iPhone

Concept Sketch Series #2 - Parent/Student/ iPhone

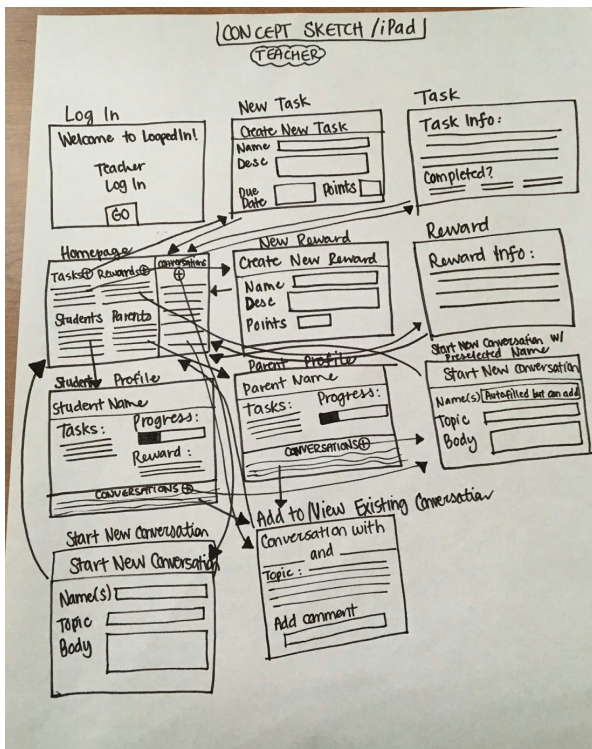
Apple Watch - teacher



Apple Watch - Parent / Student

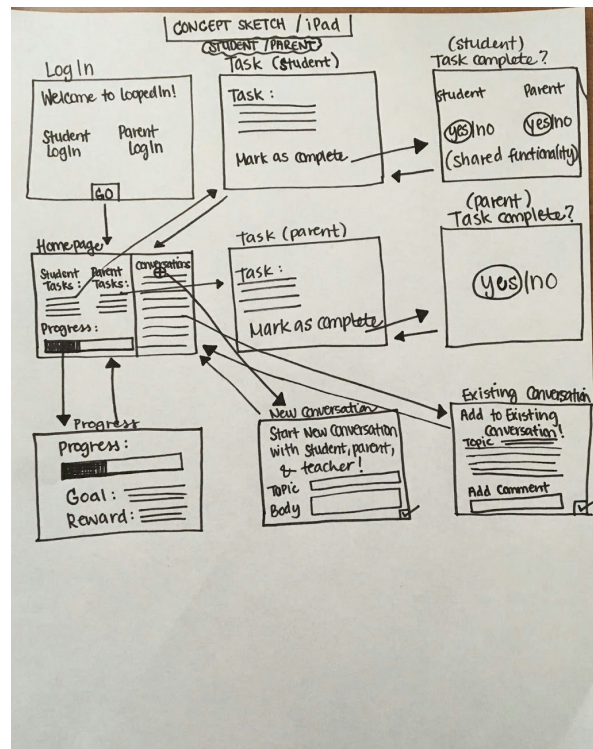


Concept Sketch Series #3 - Teacher/Apple Watch



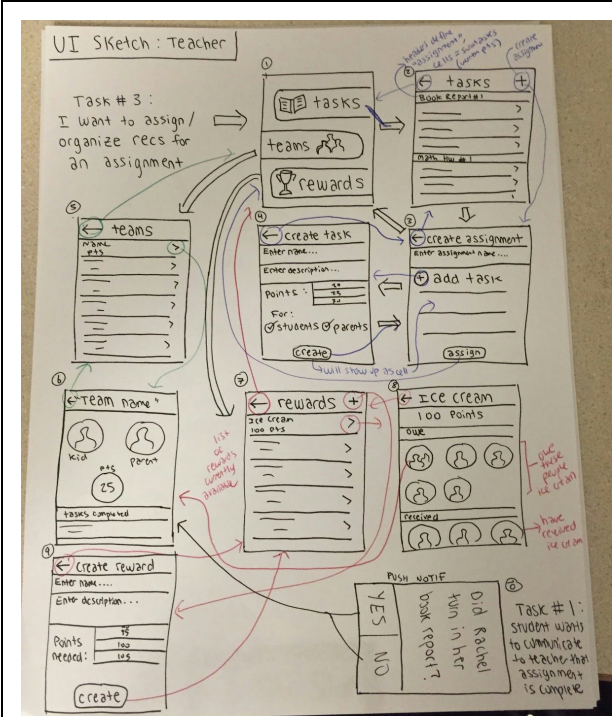
Concept Sketch Series #4 - Teacher/iPad

Concept Sketch Series #3 - Parent/Student/Apple Watch

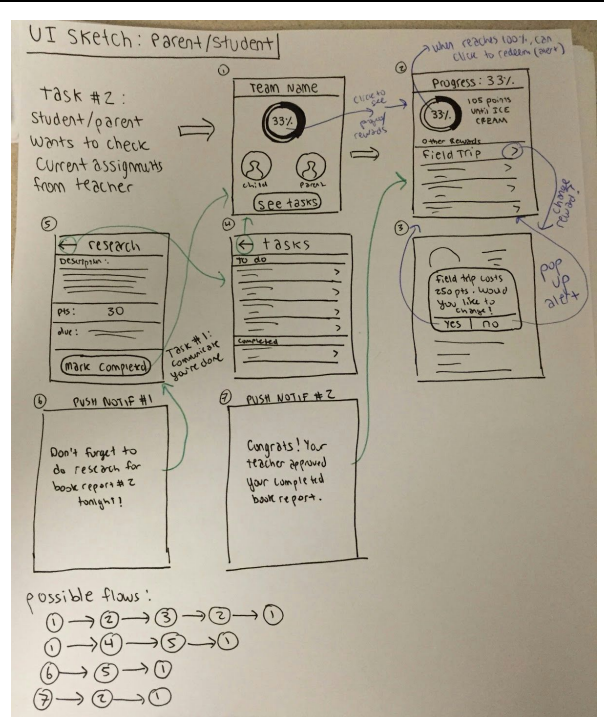


Concept Sketch Series #4 - Parent/Student/iPad

Storyboards / Detailed UI Sketches


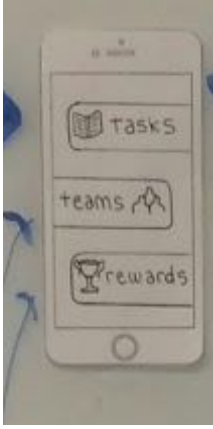
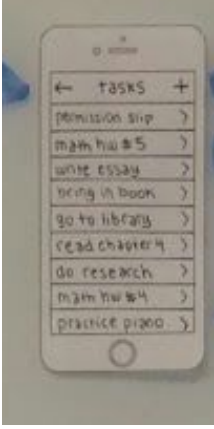
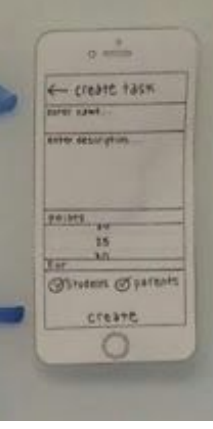

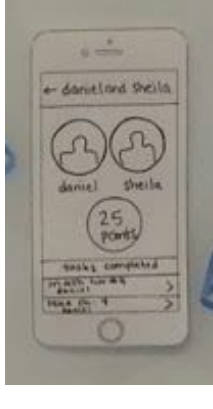
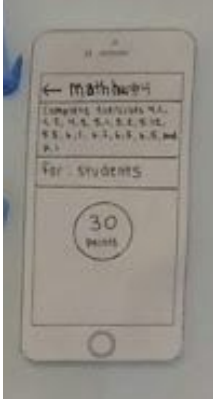
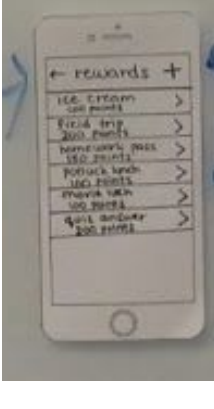




Teacher Storyboard



Parent/Student Storyboard

Teacher UI Individual Screens

				
<p>T - Login</p>	<p>T - Homepage</p>	<p>T - Task Page</p>	<p>T - Create Task</p>	<p>T - Teams</p>
				
<p>T - Individual Team</p>	<p>T - Individual Task</p>	<p>T - Rewards</p>	<p>T - Individual Reward</p>	<p>T - Create Reward</p>

Parent/Student UI Individual Screens

PS - Login	PS - Homepage	PS - Progress	PS - Confirm Change
PS - Tasks	PS - Individual Task	PS - Pop-Up Assignment	PS - Pop-Up Reminder

Reasoning for Selection

Ultimately, we were considering two iPhone apps, one iPad app, and one Apple Watch app. While we were excited about the iPad's bigger screen size, which would grant us more room for information and enable parents and students to perform actions together, we moved away from this interface because one of our main goals is to support "on-the-go" notifications. Unfortunately, the iPad does not lend itself to "in-the-moment" notifications in the same way as an iPhone or Apple Watch. While we were intrigued by convenience of the Apple Watch, we decided against this interface because it is not as accessible and widely distributed as the iPhone, and we want our product to be available to as many students, parents, and teachers of grades 6-10 as possible. Finally, when choosing between the two iPhone apps, we decided to go with the one that matched the first concept sketch because of its simpler functionality, cleaner layout, and more comprehensible objective.

Prototype

We created a paper and sharpie prototype with two different user interfaces, a teacher view and a parent/student view.

Teacher view: The teacher logs in and sees a screen with three options: tasks, teams, and rewards. Clicking on tasks takes him/her to a page with a list of all the tasks and a “+” button to create a new task. If he/she clicks on a particular task, he/she sees a page with information about that task. If he/she creates a new task, the app takes him/her to a page with fields to fill out a task (name, description, # of points it’s worth, and whom it’s for). Alternatively, clicking on “teams” from the homepage takes the teacher to a list of all the parent/student teams. The teacher can click on any one of these teams to see the tasks they have completed as well as how close they are to earning a reward. Lastly, the teacher can click on “rewards” from the homepage, which functions similar to tasks--the teacher sees a list of rewards, but can also create a new one by filling out some fields such as the # of points needed to earn the reward and what it is. On the page for a single reward (that has already been created), the teacher may view which student/parent teams have earned that reward and which ones have already seen it.

Parent/student view: A parent or student logs into the app and is taken to the homepage, which includes a clickable progress graph, a picture of the student and parent, and a “see tasks” button. By clicking on “see tasks,” the student or parent may see a list of their uncompleted tasks (as well as completed ones). He/she may click on any particular task to view more information about it and also to mark it as completed. Alternatively, from the homepage, the student/parent may click on the progress bar to see more information about their progress and rewards. From this page, they may change the current reward they are working toward.

Methods

Participants

Because our product is meant to function differently between parents, teachers, and students, we decided to test our paper prototype on one each from these groups. Ryan Davies, a CS TA, served as our teacher, Ray and Shoney Blake, parents and RFs at Muwekma, served as our parents, and Sloane Sturzenegger served as our student. We reached out to Ryan, an instructor for one of our classes, via email, and he was willing to participate without compensation. We were introduced to Ray and Shoney through a mutual friend and are compensating them for their time with a \$5 starbucks gift card each. We approached Sloane while he was working on homework at Tressider, and compensated him for his time with feedback on his own project.

Teacher Test Subject - Ryan Davies, CS TA



Parent Test Subjects - Ray and Shoney Blake



Student Test Subject - Sloane Sturzenegger



Environment

We ran through user testing with all of our participants in their natural settings, choosing to go to them so that we could use a realistic environment in which they would use the prototype. We met our student, Sloane, at Tressider, where he was already working. We met Ryan, our teacher, at his house where he was working on his own projects. We met Ray and Shoney, our parents, in their kitchen to run through the prototype with the two of them together, which they believed was an accurate representation of how they would use the app for their own child.

Tasks

As was mentioned before, our app is meant to be used differently by three separate groups (parent, students, and teachers). Because the three users would normally accomplish different tasks using the app, we created distinct tasks for each user group. These tasks are described in the table below.

Parent/Teacher/Student Tasks

Participant	Task	Storyboard (Individual Screens)
Teacher	Create and Assignment: For this task we want you to create a task. The task is for parents and students to sign and turn in a permission slip and it is worth 15 points.	T Login → T Homepage → T Task Page → T Create Task
Teacher	Check Reward Points: For this task we want you to check and see which students have earned an ice cream party.	T Homepage → T Rewards → T Individual Reward
Teacher	Check Student Progress: Check and see if your student, Daniel, has completed the task Math HW #4	T Homepage → T Teams → T Individual Team
Parent	Check Tasks: Go into the app and check to see how many tasks your son Daniel needs to finish	PS Login → PS Homepage → PS Tasks

Parent	Check Progress: Check your son's and your progress towards your reward. What is your reward and how close are you to achieving it?	PS Homepage → PS Progres
Student	Complete Task: Go into the app and mark the Math HW #5 task as complete	PS Login → PS Homepage → PS Tasks → PS Individual Task
Student	Change Reward Option: You have chosen a reward within the app, but want to maybe change it to going on a field trip. Check and see how many points a field trip reward is worth. If it is worth less than 200 points, choose that as your chosen reward.	PS Homepage → PS Progress → PS Confirm Change
Student	Check Complete Tasks: Check and see how many tasks your mother Sheila has completed within the app	PS Homepage → PS Tasks

Procedure

For each user testing run-through, Simone read from a script, included in the Appendix, to explain and demo the process to the user. Simone also assigned tasks, updating a paper screen as the user attempted to navigate through our prototype in order to accomplish these tasks. Maddy and Rachel observed and took notes throughout the process.

Testing Measures

- inform the user when they are correct in assuming that they have successfully accomplished a task
- inform the user if something they try to do does not take them to another screen or if they have encountered some limitation of the paper prototype
- inform the user if they incorrectly assume to have finished the task
- repeat the task throughout testing if the user needs to hear it again
- encourage participants throughout the task to explain their actions and ask for clarification

Results

We gained very helpful feedback from our user testing phase. Overall, the teacher functionality seemed to be more comprehensible than the parent/student functionality. Below is a summary of our findings (for more detailed feedback and navigation issues, see appendix).

Student Testing: Overall, our student participant seemed to understand the basic functionality, but had some navigation issues as well as some trouble understanding the motivation for a student using the app. The first navigation issue was that he did not realize he could assume he already had an account and pointed out that we needed to give him a way to sign up. In addition, he wanted to click on the profile pictures and was confused by the fact that they were not clickable. Our participant was also uncertain about the progress bar and when the percentage actually went up. He thought we could better indicate real time progress with a percentage increase popup. Finally, at the end of user testing, our participant said, "I don't know what I got out of it. Did my percentage go up? It would be good to show percentage going up so I know," indicating to us that real time progress was not only an important UI component, but also a crucial aspect of a student's motivation for using the app.

Parent Testing: Our parent testing was especially valuable, as we had two parents interacting with the app and offering their insights. The parents seemed to understand the basic functionality, but also had navigation issues and offered some very helpful suggestions for improvement. One issue was that they both expected to tap on Daniel's picture and see his tasks, reinforcing what we heard from our student participant on this same issue. In addition, it was not very obvious to them how close their student was to finishing a reward and thought we could make this aspect more clear. Finally, they expressed concern about the student being able to mark tasks complete himself/herself. This concern reinforced the need for us to include functionality for teachers to verify that students have completed tasks.

Teacher Testing: Our teacher participant appeared to easily understand how to create a task and check which of his students had earned an ice cream party. He displayed a bit more trouble with checking if his student Daniel had completed his math homework. He first navigated to teams, then to tasks, and then back to teams, and did not find this piece of functionality to be intuitive. He also seemed confused by the idea of student/parent teams being listed for the teacher and thought perhaps we only needed to display student names. One final piece of feedback he provided was that he wanted to see who had turned in the math homework on the task page itself.

Discussion

When examining our user testing results, we found some common themes in the feedback:

- People were confused about the student/parent teams and thought having more separate student and parent functionality would be helpful.
- People did not instinctively know to click on the progress circle and thought the progress could be better visualized in real time.
- People wanted to be able to click on profile pictures and did not understand why they were there if they were not clickable. They assumed clicking on “Daniel” would bring up Daniel’s tasks.

Moving forward with our app, we would like to take into account much of this important common feedback. First, we would like to create a greater separation between the role of students and parents on the app to avoid confusion about the student/parent teams. While we still want the app to allow students, parents, and teachers to work as a team, perhaps we do not need to represent student/parent combinations as teams and can instead allow teachers to view students and parents separately. Second, we would like to better visualize student progress in real time so that students understand immediately when they have gained points and are closer to reaching their reward. We hope that this change will not only enhance the UI, but also keep students motivated to use the app.

Beyond these top two priorities, we have some other important changes to incorporate into our next prototype. We need to make a decision about the profile pictures and decide either to take them away or give them click functionality. One crucial piece of functionality that we need to include moving forward is teacher verification of student task completion, so that teachers can validate whether or not students have completed an assignment when they say they have. Given that our parent participants were concerned about students being able to mark their own assignments as complete, we feel that this teacher verification feature is a top priority. Some other new features that we would like to incorporate are sign up functionality and display of students who have completed a task on the task page. We hope that by making the above changes, we can achieve a more comprehensible, clean, and fun app that better communicates its purpose.

Appendices

Demo Script

Hi! Thank you so much for participating in our project. Basically we have created a prototype for an app that works as a communication tool between parents, students, and teachers. The idea is that creating a system that rewards communication will foster better relationships. It's fairly simple, the main idea is that parents and students are rewarded with points when they accomplish tasks, and these points go towards a final reward.

For this project we want you to interact with these images of screens the same way you would if they were on an iPhone. We want you to click, scroll, pinch, do whatever you would with an app on your phone to try and navigate. We have several tasks we want to try to execute using our paper app. We really want to try to understand what you're doing while you do it, so try to explain your actions and thought process as you go. For example, if you swipe on a screen because you expect to be able to scroll, say that, if you click a word or button because you think it will lead you to another screen, say that. If something happens that you didn't expect or don't understand, we want to hear that too.

User Testing Feedback

Common themes:

- Wanted to be able to click on profile pictures (either get rid of them or make them clickable)
- People confused about parent/student together
- People didn't know if they could click on progress (% sign wasn't intuitive)
- Task with names listed underneath would be helpful

Testing with Student:

(notes 1)

- "I want to sign up but no way to sign up" → thought he needed to sign up
- "I click on Daniel, nothing happens"
- Confused about how to do tasks
- "I don't know what I got out of it. Did my percentage go up? Would be good to show % going up so I know"
- Do I have enough points? → "I have no idea, I guess it's 30 & I need 105. I don't know what 33% is"
- I'd like to scroll
- Doesn't know what pictures are for unless something to click on

(notes 2)

- "When I click on Daniel, nothing happens...that's so sad" haha
- Took a long time to mark task as complete
- wants to be able click on sheila

- wants to drag sheila to the progress bar
- Doesn't know what 33% progress bar
- Doesn't know why you have pictures if you can't click on them (should click and then see all the things he's done)

Testing with Parents:

(notes 1)

- Seems to understand username/password
- To check Daniel's progress, "I would tap on Daniel"
- Then nothing happens so click see tasks
- From this page I assume he has 3 tasks to do, but would tap on each to make sure there's no additional task
- Assuming some screen comes up when click on task
- "Can the student mark as complete? Seems dangerous:
- "Assume 33%, I would normally think that we'd click Daniel/Sheila then see tasks. Would assume that whatever task came up would be remaining 67%"
- Reward → would click on profile, see tasks, see if reward is there

(notes 2)

- Logs in easily
- Taps on Daniel (selects) then hits see tasks
- "I assume he has 3 tasks he needs to do but I would select each one and make sure there aren't hidden tasks there"
- Is the student allowed to mark it complete?
- That seems dangerous
- Not super clear on how close they are to finishing reward (33%?)
- To see reward, would click on my own profile, then click on 33%

Testing with Teacher:

(notes 1)

- Seems to easily understand how to create a task
- "I really liked the scrolling thing with the points"
- Seems to easily understand how to check which students have earned ice cream party
- Checking if Daniel has completed math hw #4 was more tricky → participant went to teams, then backwards, then to tasks, then back, then to teams
- Seemed confused by students teaming up with parent, didn't necessarily know, thought it was 2 students
- Maybe don't need to know the parent's name?
- "It would be good to see who hasn't turned in hw4 on task itself!"

(notes 2)

- Task 1: Really liked the picker (for points)
- Task 3: confused about just Daniel, tried to go to teams but since it said "Daniel and sheila" he was confused
- On task page — useful to know who still needs to do it