IDC for IEP
11/10/14
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Usability Testing Review

First Test
Lane oversaw the evaluation of the website design and Kristen oversaw the evaluation of the clip design. After our heavy handed introduction our two participants were thoughtful in their experiences with the design and had the following feedback to offer:

- Axis labels for graphs could be improved (heuristic violated-visibility of system status)
- The Accommodation Timeline was not intuitive to navigate (heuristic violated-flexibility and efficiency of use)
    - The colors in the graph really threw people off. We felt that we could move the timeline out of the home window and devote a tab to it so it would not be so cramped and allow for easier navigation.
- Graphs/timelines should give some reference to the current date (heuristic violated-visibility of system status):
    - We thought this was not the most important issue as the home view would always display the most up to date information.
- The labeling of goals on the clip device could be clearer-our shorthand was too hard to understand with no prior context (heuristic violated-recognition rather than recall):
    - We felt this was a helpful recommendation and important to change because even those deeply involved with the IEP process should not be taxed with a numeric system for learning goals, but rather given more cues for goal recall.
- The undo button for the clip system was confusing (heuristic violated-help users recognize, diagnose, and recover from errors)
- The numeric entry feature for certain goals was not intuitive (heuristic violated-aesthetic and minimalist design)

New Implementations:
Given these critiques, our redesign before our second usability test included:
- Added labels to the xy-axis of our graphs in the Parent view
- Removed the completed goal to prevent association between the calculator and goal number 3
- Improved clarity of goals that were being shown on the clip
- Added two new pages to the clip system; one for the goals in-progress and another for the goals already tracked so that the user can undo the goals they've submitted
- Changed the submission interaction; instead of tapping to submit a goal tracking, they would swipe right

Second Test
Our usability participant outside of class was an female engineering junior undergraduate student at UW. We were under a time constraint and she was willing to participate in our test. We gave her a brief context of our design and asked her to test both our parent desktop and clip interfaces in a library as it was the most convenient location for her. Kristen was the facilitator for the clip interface and Lane was the facilitator for the parent view. Jessica was

the note taker/observer. We asked her to complete a few tasks that was similar to the one done in class.

Feedback:

Severe Incidents; Easy Fix:
- Input of information in text boxes
  - This may be due to the fact that the text boxes were poorly drawn, however the participant initially thought the text boxes were progress bars and did not know that you could input numbers there.
- Undo vs Cancel
  - The participant attempted to remove one of their previous submissions. When they hit remove however, the bar turned into "Confirm" or "Undo". This was confusing for the participant since they thought they were already undoing the submission and was confused by the confirmation and the undo.

Medium Incidents; Medium Fix:
- Commenting option
  - The participant had initially wanted to enter comments about the student's progress in addition to logging quantitative information about the goals. However, we currently do not have a place to do that in our clip system.

Medium Incidents; Easy Fix:
- Submitting/inputting information
  - The participant didn't notice the text letting them know that they should swipe right to submit the information. As they were entering the text from the calculator that popped up, there was a submit button which they thought would submit the information.
- Dual Pages
  - It wasn't immediately clear to the participant that there were two pages in the goal interface, one for in progress goals and another for tracked tasks. When asked to remove her previous submissions, she was lost until we pointed out that there were 2 dots at the bottom. We asked her what she thought that meant and immediately she understood what she needed to do.

New Implementations
- Changed "Undo" text to "Cancel"

Third Test
The third usability test was done in class. Lane and Kristen were the facilitators for their respective designs, and Jessica and Monique were the note takers/observers. The participant was a TA of the class as we were reviewing our paper prototype in class. We asked him to complete a few tasks.

Feedback:

Severe Incidents; Easy Fix:
Clip Design
- Back buttons/breadcrumbs
  - Our clip design lacked a way for users to go back to previous pages

- Stick figures to make list of students more apparent
  - The user was distracted by the student's initials in the home page.

Parent Design
- Colors indicative of progress not noticed
  - Users did not notice that the colors correlated with the progress the student was making
- Graph conventions broken
  - Our y-axis was on the right side as opposed to the left.

Severe Incidents; Medium Fix:

Clip Design
- Unsure of relationship in "All Accommodations" between student and accommodations table
  - It wasn't immediately clear to the user that the table was a list of all the accommodations and the students that needed them.
- Fade out/extra peek of information to show user there is another page
  - The dots at the bottom were not clear enough to show that there are multiple pages.

Medium Incidents; Easy Fix:

Parent Design:
- Progress bar and textual description
  - One of our goals had a textual description in the progress bar to easily help the user read the graph, but our other one didn't.
- Use bulleted metaphor (slight indentations)
  - This may be due to the fact that it was hard to notice that we had indentations in our drop-downs because of the paper prototypes.

Small Incidents; Medium Fix:

Clip and Parent Design:
- Add a help button

New Implementations
- Added breadcrumbs to the pages of the clip interface
- We decided to scale down the size of our buttons to make it less distracting but will not be adding pictures/stick figures so that the students will remain anonymous to other students
- We added a legend to the parent view to demonstrate the meaning of the colors
- Changed the position of the y-axis
- Included textual description of the goals in the progress bars
- Moved accommodation timeline from "Goal Reports" to the "Accommodations" page.
- Changed arrow drop downs to plus/minus sign dropdowns

Fourth Test

Our fourth test featured participant Nichelle, a parent of a student with an IEP (Parent also participated in the contextual inquiry). The test was conducted at a Starbucks (Rainier Ave. and MLK Jr. Way) and team members Monique (co-facilitator/notes computer), Kristen (note taker), and Lane (co-facilitator/ goal progress computer) were present to conduct the

session. The participant was highly engaged and gave invaluable feedback to consider as we finalize our design. Please note severity issues are addressed in the final prototype section.
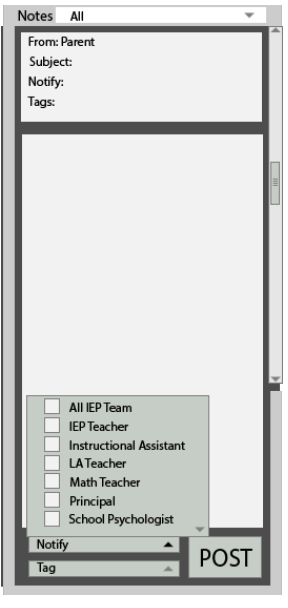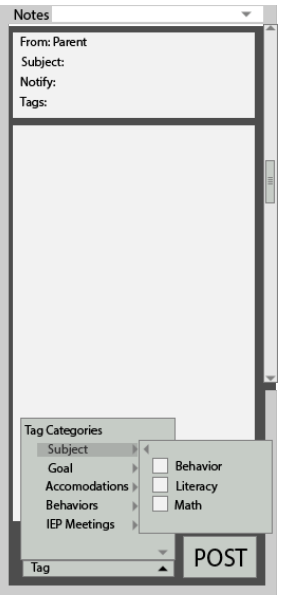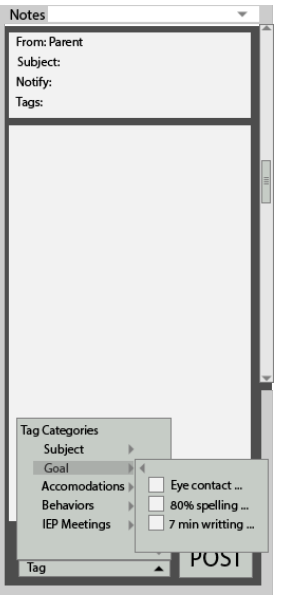
Feedback for Web Interface:

Goal Progress View:
- Positives: liked the suggestions accompanying the graphs, said overall the system could be a game changer for improving the IEP process
- Observations/Critiques:
    - Home Screen: Participant asked if this would be the initial view she would see upon logging in, her eyes were drawn immediately to the colors on the goal bars. She said upon initial glancing they reminded her of batteries and that the format was a little confusing i.e. why did the goal not take up the whole bar and what was the data linked to. She suggested putting the plus/minus drop down selectors be moved to the left side and the color progress indicators moved to the right.
    - Graphs: Participant desired more context out of the graphs i.e. would student absences be sync and attributed for lack of goal progress in a given week. For completed goals or goals experiencing success-instead of just congratulations (although being able to communicate appreciation/warmth between stakeholders was mentioned as a nice idea) she would like to have had more emphasis on what was going well and how it could be replicated.
    - Overall in the graph she wanted more information to be accessible, such as the details of the record used for statistics. For example, if she clicked on a data point it would summarize the teacher that inputed it.
    - She was confused as to why the subtask was marked for concern, but the concern was not obvious. She expressed the need for more clear explanations of progress.
    - Goals: Participant felt it would be of high importance to be a part of the process during goal creation so it would be easy to recognize goal language used on the site.
    - Feedback: Participant would have liked the option to submit comments/feedback linked to specific data points so that it comments were easily traceable.

Notes View:
- She would not look for the note function initially on the left, would prefer to send note in context of data being viewed in section where suggestions currently are. She suggested having the ability to send messages there and have the subject line be generated to the data point being referenced. She liked the conversation sortability, threading options, and the tagging options. She was associated the notify button with sending a notification to recipients instead of selecting recipients.

Default Note screen when parent enters the parent view portal Shows all notes.	Parent navigates to Literacy goals and the notes auto sort showing only literacy related notes.	Parent navigates to Social goals and the notes auto sort showing only social related notes.	Parent navigates to Math goals and the notes auto sort showing only math related notes.
When parents click the "New Note" button they are taken to this screen	Parent clicks on Notify to select which IEP member to send the note to.	Parent clicks on Tag and select a IEP subject area. These tags will be used for reports and sorting	Parent clicks on Tag and select the specific goals. These tags will be used for reports and sorting

<u>Clip View:</u>

Feedback:
　　　Screen 1: Password - success

Screen 2: Home Screen - success
Screen 3: Click on Student K.F. - success
Screen 4: K.F. Goals tracking screen to select writing goal - success
Screen 5: Calculator Screen

> Was confused about exactly what she was reporting. Suggested that the goal be shown in the calculator view with clear indication of what was being recorded. She also suggested that tracking of accommodation use should happen at the same time test and assessments are recorded. She suggested when the calculator screen shows up all available accommodations for goal being recorded on be shown and can be checked if they were used.

Screen 6: K.F. Goals tracking screen to submit data
Submit - didn't know how to submit. after a while she was able to locate the instruction on the screen. Did not like to swipe right. She would prefer a ok button or a submit button in the calculator screen.
Screen 6: K.F. Goals tracking screen to move to submitted screen

> She starting tapping different parts of the screen to achieve this (was concerned she had lost the data):
> 1. pressed the text region of the goal that she recently submitted
> 2. pressed the text in-progress
> 3. Go back out to the K.F. main screen and went back into K.F. goal
> 4. Noticed the navigation dots and the bottom of the screen. Her feedback was this symbol is not common enough for people to know what it means.

Screen 7: K.F. submitted - success
Screen 8: K.F. Accommodations - success

Severe Incidents; Easy Fix:
- Change submit format from swipe to button
- Navigation dots-it is our hope the digital mockup will make this more readily apparent

Additional Feedback:
Did not feel another device was necessary and felt it was prohibitive to schools ability to adopt the product as a whole. She suggested customized paper post it notes for teachers to use to collect the data and then use them to input via a teacher web interface. She felt $50 per clippy device was still cost prohibitive for schools and thought it would increase product adaptation to create a teacher web portal and convert clip task to paperwork. She suggested creating scannable / uploadable notes for ease of data entry. She also expressed concern that an electronic device may increase IEP student stigma and self-consciousness with being tracked on a device. Tracking on a device may be distracting to all students.

Final Paper Prototype:

Tasks Explored: The clip design's primary purpose is to help with Task 1 (aggregating IEP data) while the web interface is geared towards Task 2 (communicating relevant IEP information.
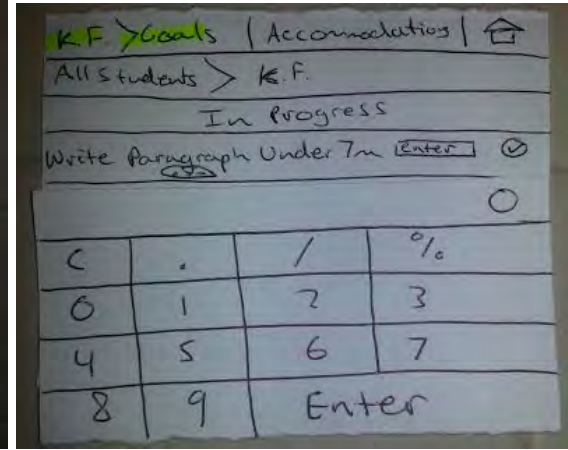
System Overview: Teachers enter passcode to enter home screen and from there can navigate to individual student goals and accommodations

View of data entry via pop up calculator Teachers his the check to record data
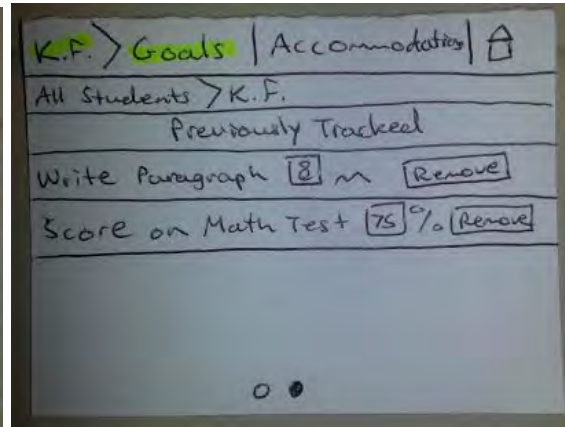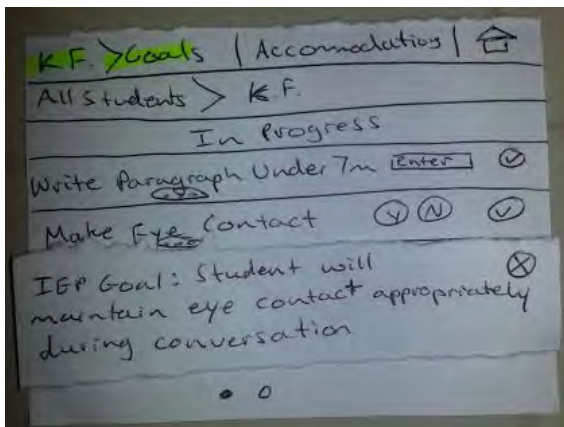
View of clicking on expanded view to read complete IEP goal.

View after swiping to tracked goals view.
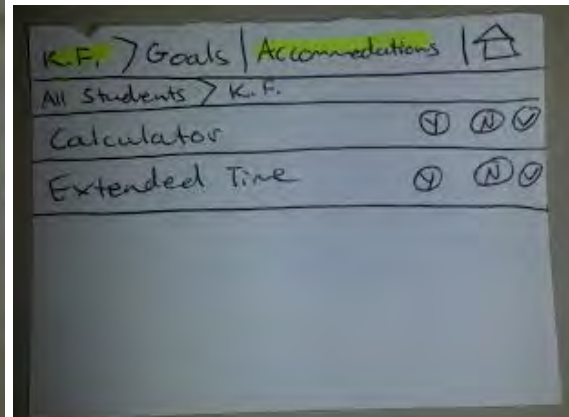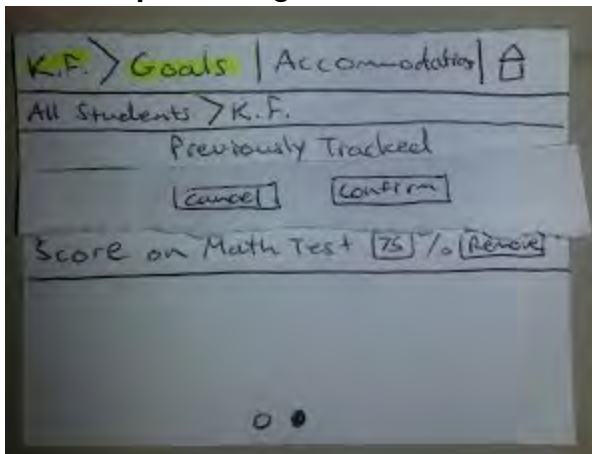
View after clicking remove option to edit previously entered data.

View of accommodations tracking.
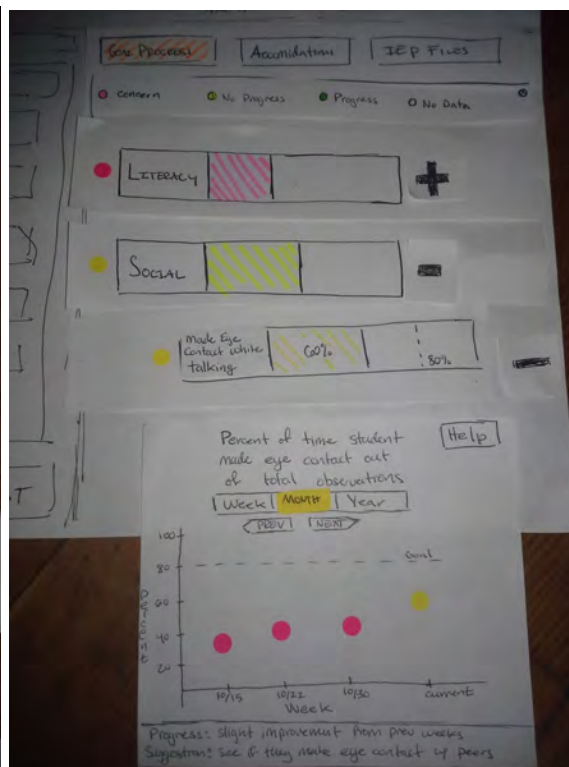
Updated Parent View Web Portal
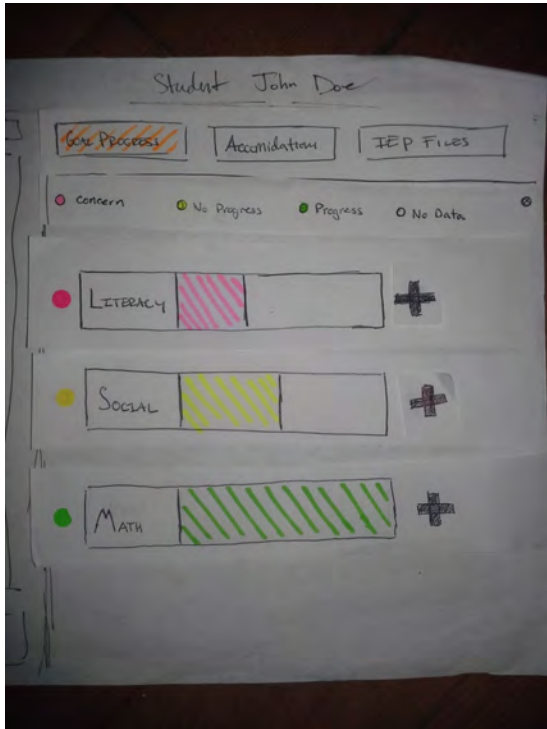
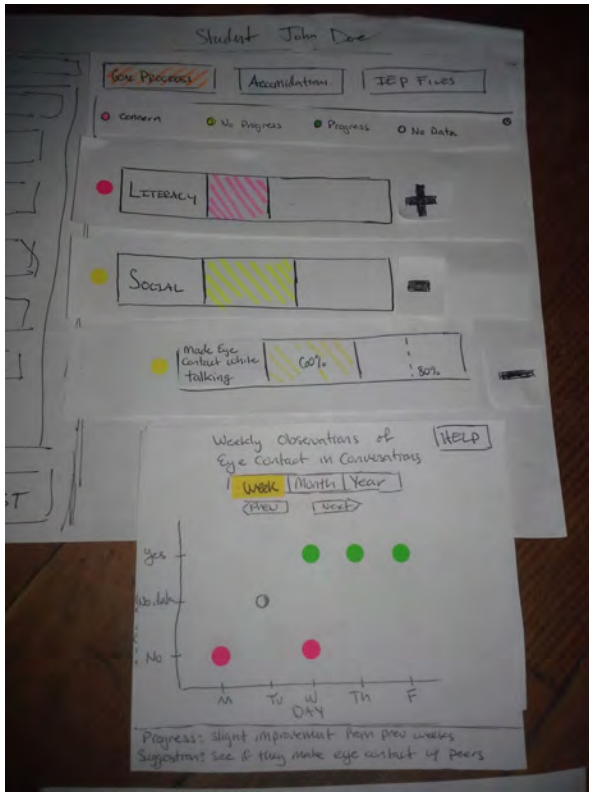**Default View of Goal Progress**
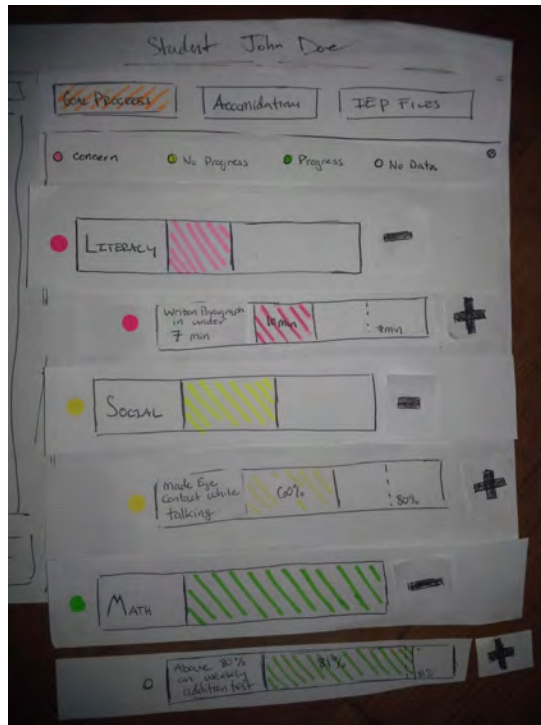
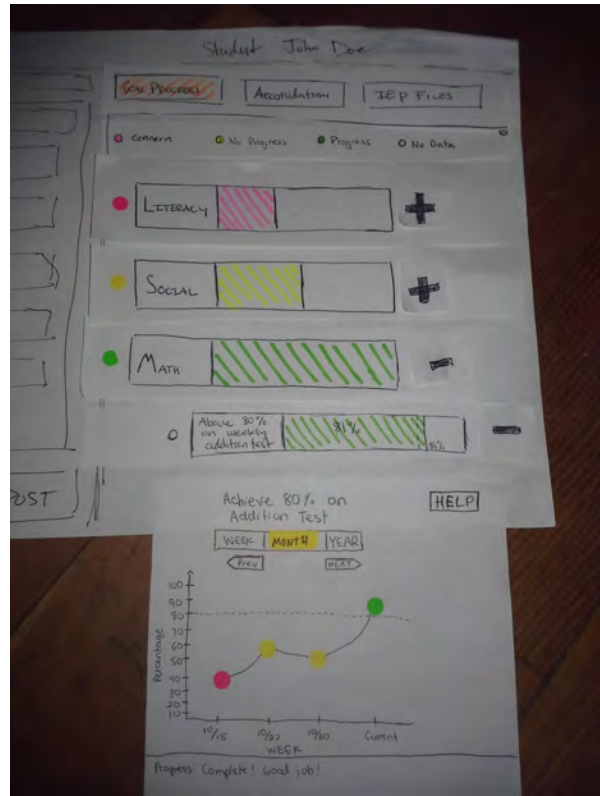**After pressing the plus sign on every section**
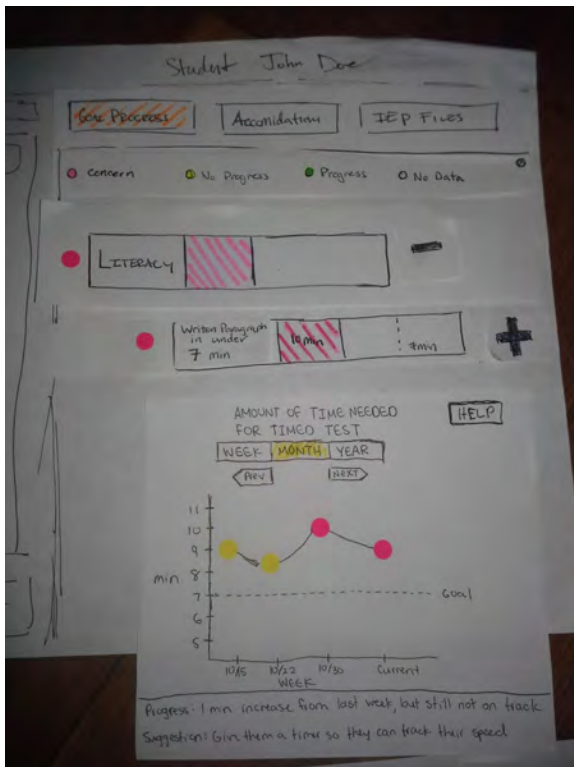
Expanding the literacy subtask
(the plus should be a minus)

Expanding the social subtask

Clicking on weekly view

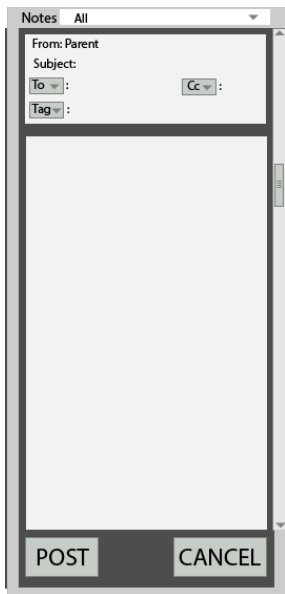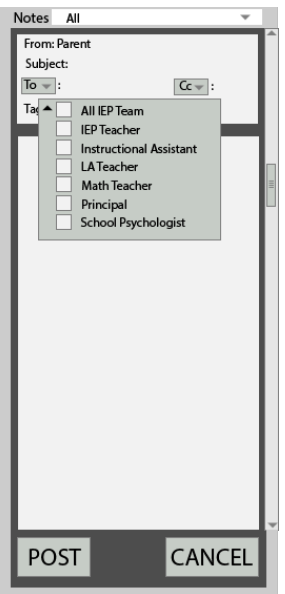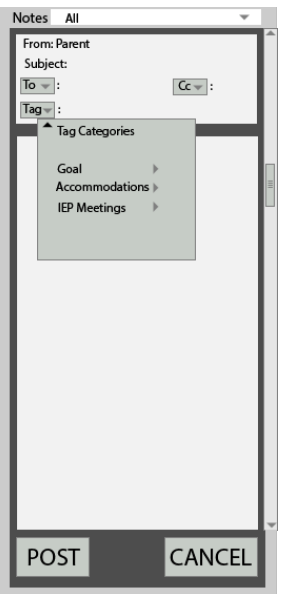**Expanding Math subtask**

UPDATED NOTES SECTION:

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When parent click the "New Note" button they are taken to this screen	Parent clicks on Notify to select which IEP member to send the note to.	Parent Clicks on Tag and select an IEP Goal. These tags will be used for reports and sorting	Parent Clicks on select the specific IEP learning area and then selects the goal. Tags will be used for reports and sorting

<u>Final Revisions</u>

1. IE+ Goals In-Progress page and History of Submissions page
   - In our initial design, we did not think to separate the goals that are in progress and the goals that have already been tracked. We wrongfully assumed that after a goal has been submitted/tracked, it would no longer be part of the goals page for the day. However, it was pointed out that the goals could be tracked several times a day and that teachers could make mistakes when making submissions. In hindsight, these areas of error seemed obvious; however our initial design did not account for human error. If the user made a mistake in making a submission, they would not be able to go back. This was a major design flaw, which caused us to create 2 new pages to account for the errors and to make it clear on how to fix them. By adding a page purely for the list of goals, the user could input and track the goals as many times as they want. If they feel like they made a mistake, they could go to the accompanying page with a history of the submitted goals. By doing so, the user could undo submissions, edit submissions, and even see their progress in tracking their students throughout the day.
2. Clear representation of goal progress
   - Overall we discovered a lot of aspects related to how we were trying to display goal progress that people found confusing. These included: not picking up on the red yellow green indicators as a way to display progress, misunderstanding of the graphs, misunderstanding of what was being measured, and confusion with why the graph was labeled how it was specifically the y-axis orientation. Detecting these issues is incredibly important for our design, since we want to create simple informatics that intuitively update parents on their child's progress. These informatics need to be understandable to to parents of varying educational backgrounds and cultures, thus discovering all of the small modifications that make the design more accessible and intuitive greatly increase the success of our system.
3. Simplification of Interfaces
   - In the first in class review it became clear that conveying both the accommodation timeline and the goal progress just complicated the understanding of what was going on. We asked them to try to discover the last time a calculator was provided as an accommodation, and they started trying to navigate through the goal section instead of using the scroll bar on the timeline. Detecting this was important not only for this flaw, but in general for striving for simplicity with how much information we are conveying at one time.
   - Additionally, we went through many modifications of how to organize the notes section to be simple to navigate and to use the screen real estate in the most effective manner. In some of our usability tests our testers became confused as to how the notes were organized and where the note they were entering fit into current running sequence of notes. Our updated prototype allows a user to either create a new thread or add to the bottom of thread thus simplifying the options for how to interact with the notes. Also, the new addition section is only visible when it is clear the user wants to add a new note. When they do, the new note section takes up the entire notes section giving them all of the space to write their response. These simplifications of

the screen real estate and how to organize the notes are crucial for providing parents with clear ways to communicate with the other members of the IEP team. Since there are so many possible notes that could be written, discovering better ways to organize and navigate them is important for the overall success of parent teacher communication.

4. Converting Clip to an app based platform

-We set out with the intent to design the clip system for schools where tablet usage would not be on the horizon and to give IEP teachers and collaborators a designated tool to utilize for IEP data collection. However, based on our usability test feedback and group discussions we are considering converting the clip design to an app based platform with the sincere hope educators get increasing access to tablet usage. The overall design would still be the same in terms of sizing and we are considering having it be an app that only occupies a certain small section of the screen to encourage frequent usage throughout the day without interrupting other tablet tasks.