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Team Members

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Stamp of Approval Sealer

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Mockup Maven

Problem and Solution Overview

Individualized Education Programs (IEPs) were created in an effort to ensure special education students received appropriate accommodations and measurable goals to work towards during their educational careers. The potential for IEPs to be helpful and instructive documents collaborated on by parents, teachers, and students, is more often than not lost in the difficulty of tracking goal progress and miscommunication between stakeholders. To address this critical needs area in education we propose an IEP data collection app for teachers to be synced with a parent/teacher web portal to create clear channels for purposeful and accurate communication.

Initial Paper Prototype

Focuses of the Interfaces:

- The primary purpose of the attachable device interface is to help with aggregating IEP data by creating an application for teachers to collect data directly in the classroom.
- The web interface focuses on presenting relevant IEP information to members of the IEP team and on fostering communication between the team.

IEP-Connect: Classroom Data Collection

Specific Tasks:

- View Accommodations of all students in the class with IEPs
- Collect data for specific students in the class.



Home screen for security

All Accommodations 🏠		
JD	KF	AG
LH	LI	JJ

Home screen after entering passcode

All Accommodations 🏠		
Calculator	JD	KF
Extra Time	JD	AG
Graphic Organizer	LI	
Seating	LH	

Viewing all accommodations

JD > Goals Accommodations 🏠		
Made Eye Contact	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Raised Hand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Tied Shoe	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Used Appropriate Volume	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Used Proper Greeting	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Viewing JD's goals

IEP-Connect: Classroom Data Collection (continued)



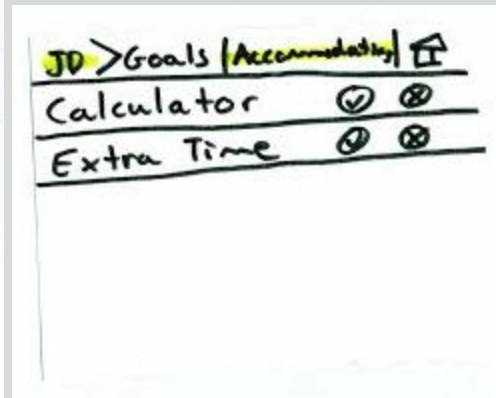
Recording JD's goal



Being given the opportunity to undo entry



Revert back to original view



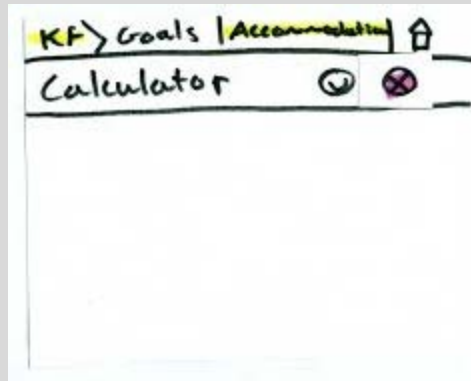
View JD's accommodations



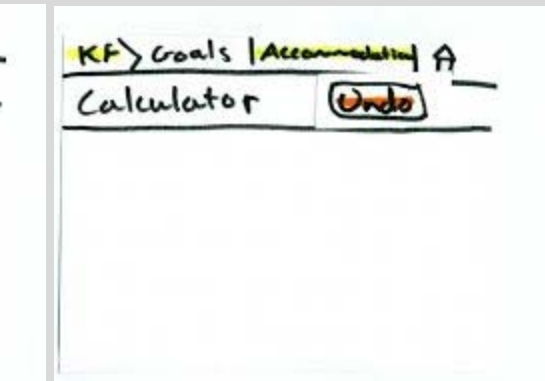
Go back to home screen



View KF's accommodations



Record lack of accommodation



Realize mistake and undo

IEP-Connect: Classroom Data Collection (continued)



View KF's Goals



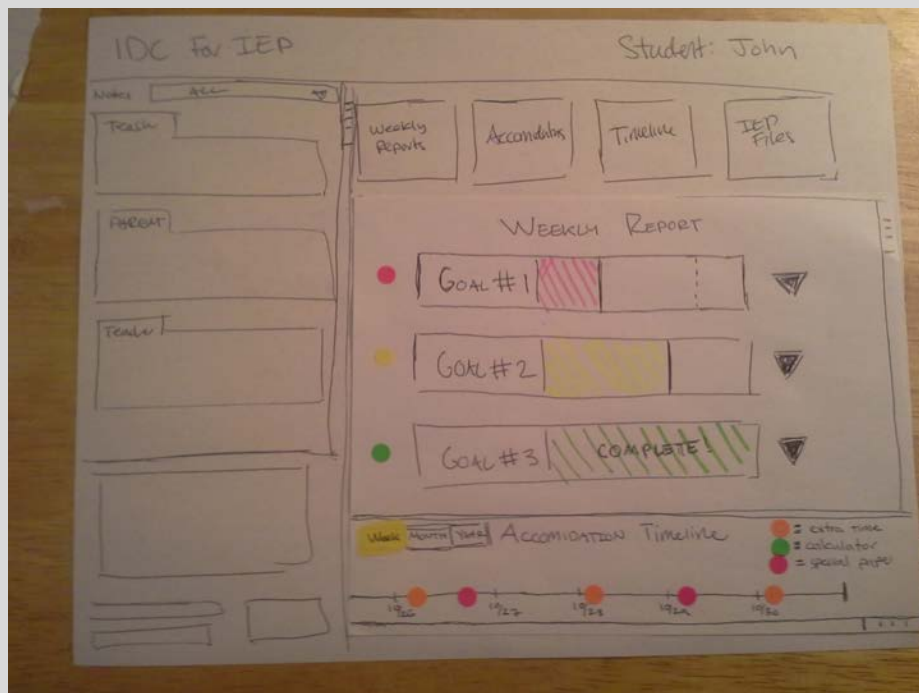
Record data for KF's goal

IEP-Connect: Parent Portal

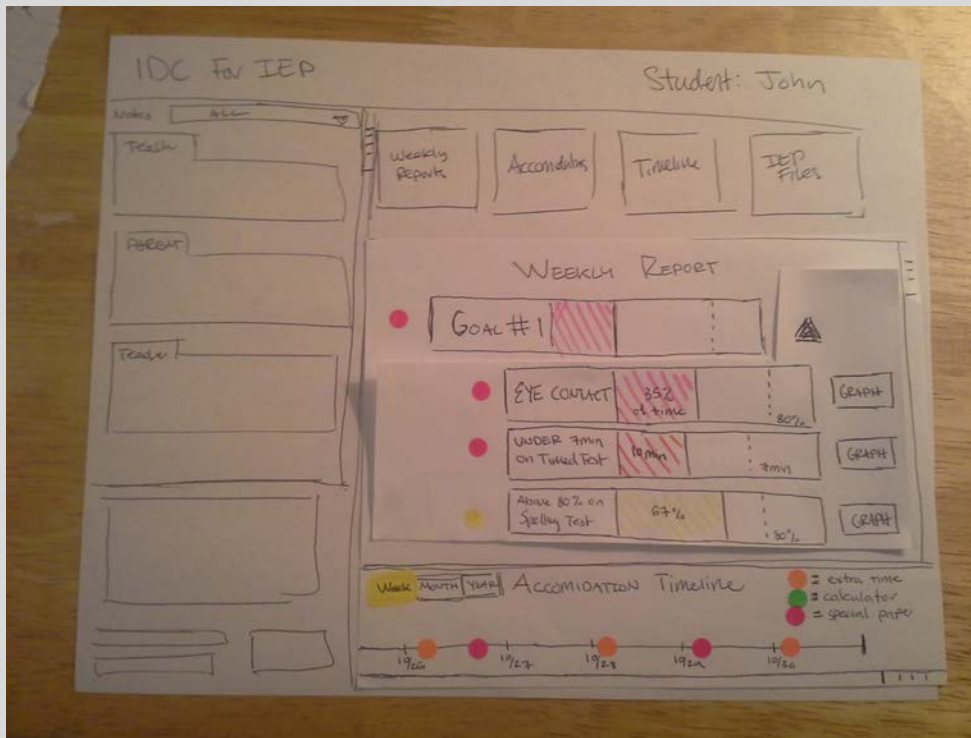
Focus 1: Presenting Goal Progress

Specific Tasks:

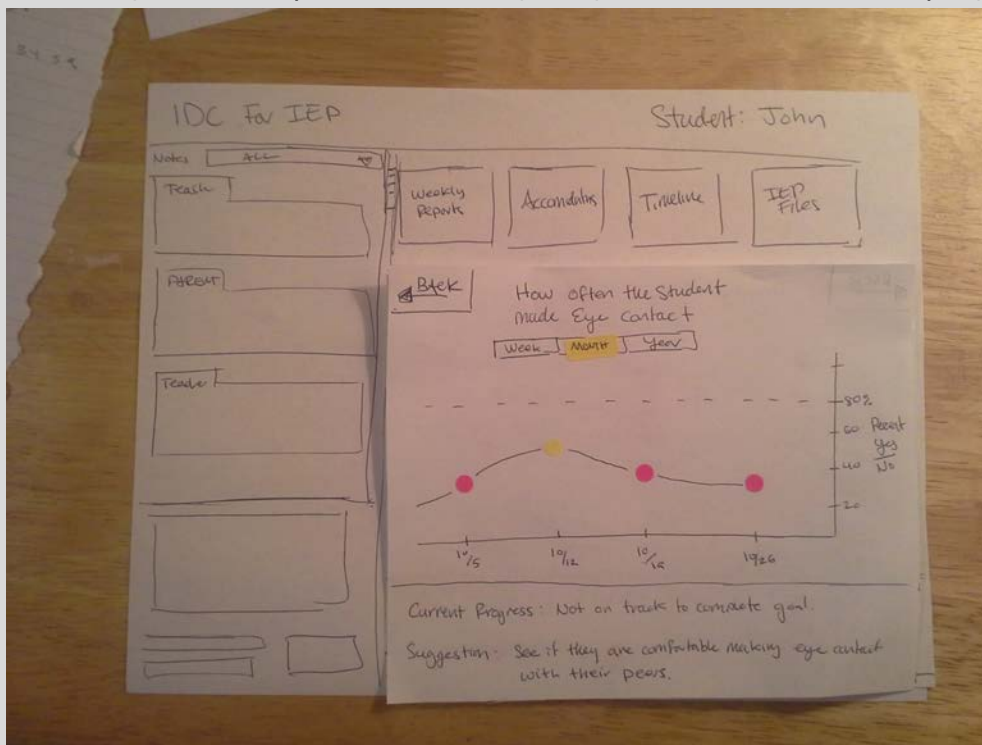
- View the progress of the goal the student is doing poorly on by trying to understand progress of sub goals.
- See the last time the student was provided a calculator



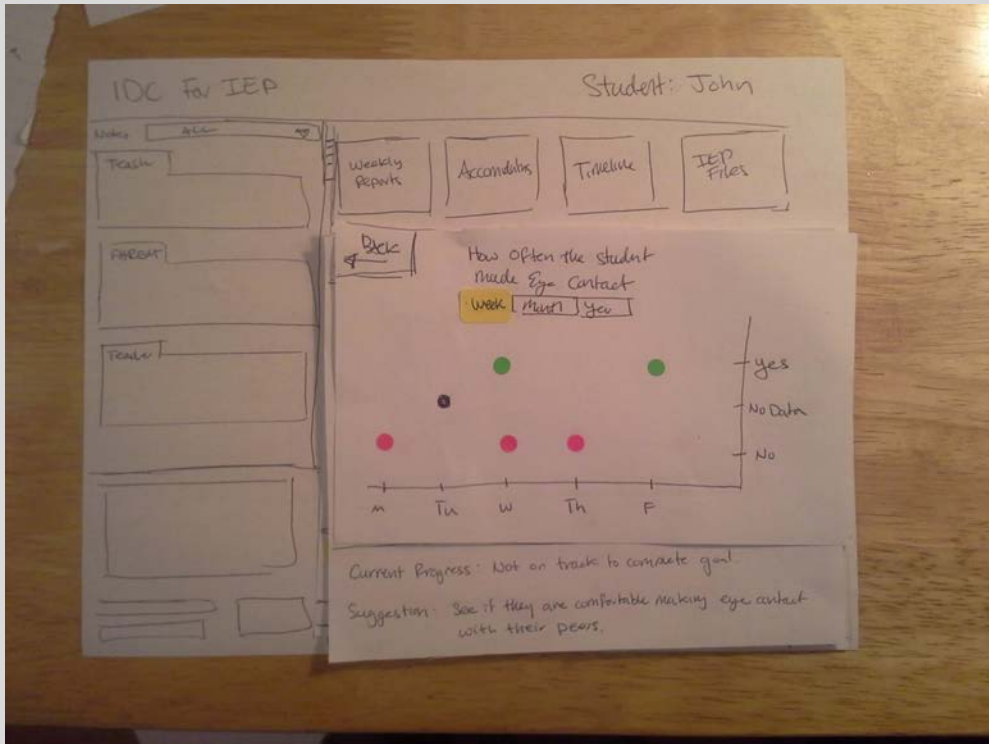
Home interface of weekly reports, showing summary of each goal and a visualization of accommodations provided over the past week.



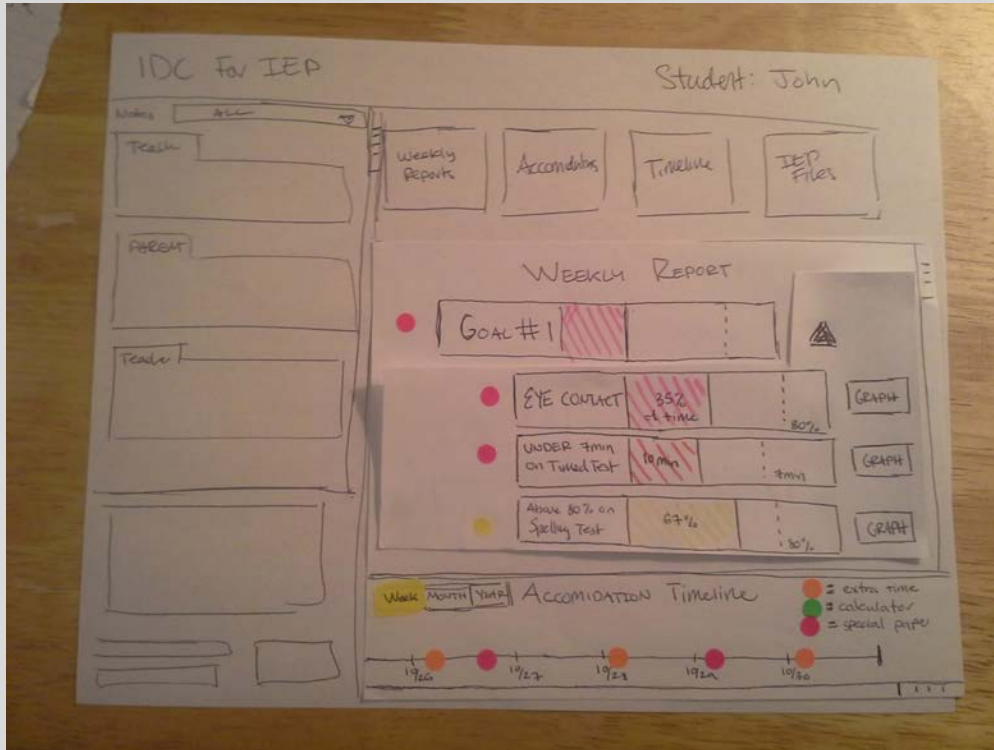
After selecting Goal 1 drop down, revealing subgoals of Goal 1 and their progress



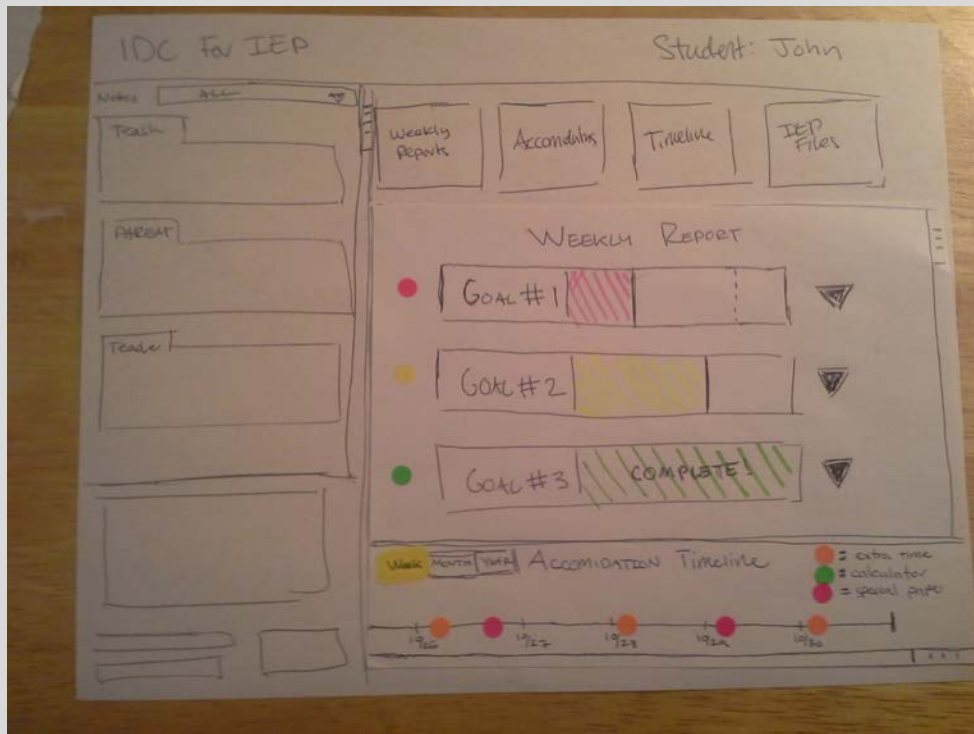
View after selecting "Graph" of subgoal 1 of goal 1



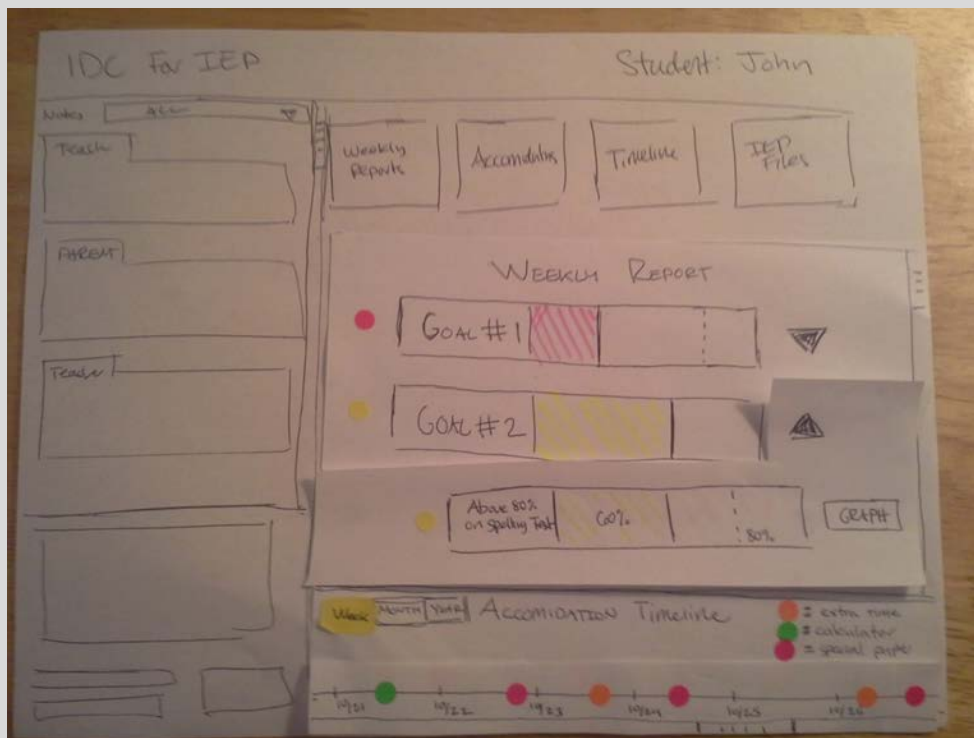
View of yes/no data after changing graph preference to weekly



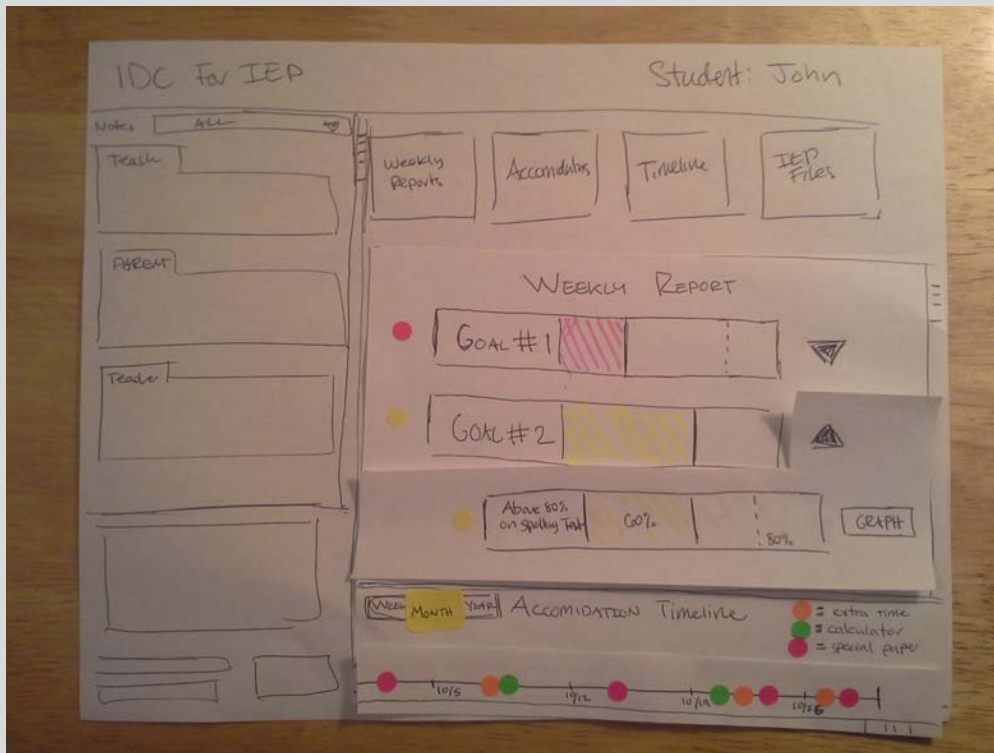
After pressing the back button



After minimizing the subgoals



After using scroll bar in the accommodation timeline



After hitting Monthly view of accommodations

IEP-Connect: Parent Portal Continued

Focus 2: Conversation Timeline

Specific Task:

- Send a note and sort the note section based on tags

Parent View Notes:

(Left) Default Notes - the default view is a scrolling list of all the notes from all IEP team members.

(Right) Notify Expanded menu - When a parent write a new note they will be able to select who they want the note to be sent to.

The image displays two side-by-side screenshots of the IEP-Connect Parent Portal interface, specifically the 'Notes' section. Both screenshots show a list of notes with the following details:

- Notes are sorted by date and time, with the most recent at the top.
- Notes are categorized by role: Teacher (8:32 am Tuesday 11/4/2014), Parent (4:15 pm Monday 11/3/2014), and Teacher (7:30 am Tuesday 10/28/2014).
- Each note has a corresponding 'Notify' dropdown menu and a 'Tag' dropdown menu.

The left screenshot shows the default view, where the 'Notify' dropdown menu is set to 'All IEP Team'. The right screenshot shows the 'Notify' dropdown menu expanded, displaying a list of roles with checkboxes for selection:

- All IEP Team
- IEP Teacher
- Instructional Assistant
- LA Teacher
- Math Teacher
- Principal
- School Psychologist

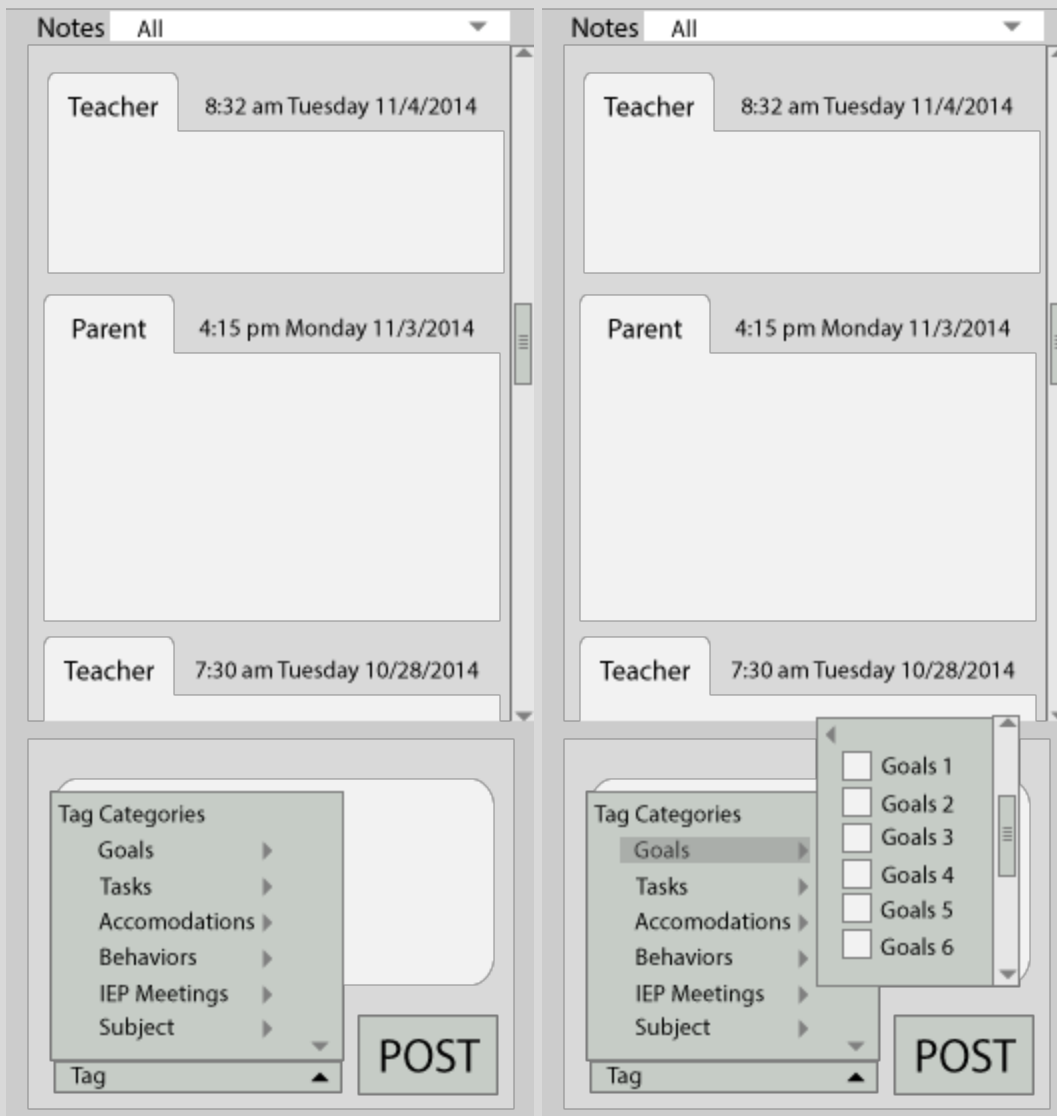
Below the expanded menu, the 'Notify' dropdown is set to 'All IEP Team', and the 'POST' button is visible.

IEP-Connect: Parent Portal (continued)

Parent View Notes:

(Left) Tag Expanded menu - As the parent creates a new note they can tag the note with multiple categories for ease of sorting and finding information in the future.

(Right) Submenu Goals - Specific example of the a parent preparing to tag a specific goal.



IEP-Connect: Parent Portal (continued)

Parent View Notes:

(Left) Tag Expanded Submenu Tasks -Specific example of the a parent preparing to tag a task.

(Right) Notes automatically sorts based on Parent View of Weekly Progress. For example, If the parent is viewing a graph from goal number 1, then the notes section would simultaneously show them the conversations/notes related to goal number 1.

The image displays two side-by-side screenshots of the IEP-Connect Parent Portal interface.

Left Screenshot: The 'Notes' dropdown menu is set to 'All'. The notes list shows three entries: a Teacher note from 8:32 am Tuesday 11/4/2014, a Parent note from 4:15 pm Monday 11/3/2014, and a Teacher note from 7:30 am Tuesday 10/28/2014. At the bottom, the 'Tag' dropdown menu is expanded, showing 'Tag Categories' (Goals, Tasks, Accommodations, Behaviors, IEP Meetings, Subject) and a list of 'Task 1' through 'Task 6' with checkboxes. A 'POST' button is visible next to the tag selection.

Right Screenshot: The 'Notes' dropdown menu is set to 'Goals, Tasks'. The notes list shows three entries: a Parent note from 6:31 am Friday 10/31/2014, a Teacher note from 2:45 pm Tuesday 10/21/2014, and a Teacher note from 7:43 am Monday 10/13/2014. At the bottom, the 'Subject' and 'Note' input fields are visible, along with a 'Notify' dropdown menu, a 'Tag' dropdown menu, and a 'POST' button.

IEP-Connect: Parent Portal (continued)

Parent View Notes:

(Right) New note posted for Goal 1

(Middle) Notes automatic sorts based on Parent View of Weekly Progress Goal 1

(Left) Notes automatic sorted based on Parent View of Accommodations

The image displays three side-by-side screenshots of the IEP-Connect Parent Portal, each showing a list of notes for a specific category. Each screenshot includes a dropdown menu at the top, a list of notes with author and timestamp, and a form at the bottom for adding a new note.

Left Screenshot: Notes Goal 1, 3 Tasks

- Dropdown: Notes Goal 1, 3 Tasks
- Notes:
 - Parent 11:15 am Tuesday 11/04/2014
 - Teacher 7:43 am Monday 10/13/2014
 - Parent 4:15 pm Monday 10/12/2014
- Form fields: Subject, Tags, Note
- Buttons: Notify, Tag, POST

Middle Screenshot: Notes Goal 1, 3 Tasks

- Dropdown: Notes Goal 1, 3 Tasks
- Notes:
 - Teacher 7:43 am Monday 10/13/2014
 - Parent 4:15 pm Monday 10/12/2014
 - Teacher 7:30 am Tuesday 9/30/2014
- Form fields: Subject, Tags: Goal 1, Note
- Buttons: Notify, Tag, POST

Right Screenshot: Notes Accommodations

- Dropdown: Notes Accommodations
- Notes:
 - Teacher 7:02 am Monday 11/03/2014
 - Teacher 3:05 pm Wednesday 10/29/2014
 - Parent 6:16 pm Monday 10/20/2014
- Form fields: Subject, Note
- Buttons: Notify, Tag, POST

Testing Process

Participants and Testing Methods:

In-Class Participants (Heuristic Evaluation): For our initial heuristic test, two fellow classmates took our paper prototype for a spin. The test lasted approximately fifteen minutes and was a solid jumping off point for our subsequent tests.

Undergraduate Acquaintance (Usability Test): Our first usability test was conducted on an undergraduate acquaintance of one of our group members. The test was held in the Research Commons using our updated paper prototypes from the heuristic evaluation.

Teaching Assistant (TA) (Usability Test): Our TA was able to help us walk through an additional usability test with our paper prototype during course section time.

Parent 1 & Parent 2 (Usability Test and Digital Mockup Critique): Prior contextual inquiry parent participants were emailed to thank participants for previous participation and updated on the status of the project. We expressed our desire to have them explore our paper prototype and receive their valuable feedback. Two-three team members met in person with the parent at a place in the parent's community. We reiterated where we were in our design process and that we are interested in their honest feedback on our paper prototype. During the first parent usability test we did not clearly explain the specific tasks we wanted the parent to perform and which parts of the design were not currently implemented.

For the second parent usability test we improved our requested task specifications. We provided them with these exploratory tasks in writing for clarity and future reference during the testing session. We identified the parts of the prototype that are currently not being implemented to minimize confusion for the second parent. With 3 team members present we had 1 note-taker and two members serving as co-facilitators/computers. With two team members the team roles were note taker, facilitator/computer.

Dream Project Volunteers (Digital Mockup Critique): After emailing the Dream Project to ask for convenient times to conduct usability tests, two undergraduate Dream Project volunteers along with the Dream Project Americorps Volunteer critiqued the digital mockup of the teacher app. All participants were familiar with IEPs. The test lasted around 15 minutes with one group member taking notes and walking through the screens. Participants were given chocolate to thank them for their time.

Testing Results

Clip → App Results Summary:

In class heuristic evaluation:

Feedback: The labeling of goals on the clip device could be clearer-our shorthand was too hard to understand with no prior context. The undo button for the clip system was confusing. The numeric entry feature for certain goals was not intuitive.

Resulting Actions: Rewrote how goals were worded, 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, users swipe right to submit.

Usability Test (Undergraduate Acquaintance):

Feedback: Not apparently clear to put data in text boxes. The undo button in conjunction with the prompt to confirm data deletion was confusing. It was unclear how to view data once it had been swiped and submitted.

Resulting Actions: Changed “undo” text to “cancel”.

Usability Test 2 (TA):

Feedback: Unsure of relationship in “All Accommodations” between student and accommodations table. The dots at the bottom were not clear enough to show that there are multiple pages. Lack of a way for users to go back to previous pages. Student initials on home page were jarring.

Resulting Actions: Added a help button, added breadcrumbs to the pages of the interface.

Usability Test 3 (Parent 1):

Feedback: Change submit format from swipe to button, navigation dots were not apparent. Did not feel another device was necessary and felt it was prohibitive to schools ability to adopt the product as a whole.

Resulting Actions: Switched design from separate hardware to tablet based application.

Digital Mockup Critique (in class):

Feedback: Consider changing color scheme, make better use of screen space now that it's a tablet app, make headers more uniform.

Resulting Actions: Went for more cohesive orange/blue color scheme to be consistent between designs. Made headers in a more cohesive design.

Digital Mockup Critique (Dream Project):

Feedback: Thought student initials would be initially confusing. Might like to have graphical representation of goals to view instead of just records. Clicking on the student initials in the header could reveal additional student information.

Resulting Actions: Changed homescreen initials to student first and last names.

Parent View Web Portal Testing Results Summary:

In class heuristic evaluation:

Feedback: Axis labels for graphs were confusing. The Accommodation Timeline was not intuitive to navigate. The colors in the graph really threw people off. Graphs/timelines should give some reference to the current date.

Resulting Actions: 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. The Accommodation Timeline was moved under the accommodation so it would not be so cramped and allow for easier navigation.

Usability Test (Undergraduate Acquaintance):

Feedback: The participant got through almost all of the tasks without prompting or assistance. She liked the idea we had about having the comment tags change as the user went through the goals.

Resulting Actions: Since we decided to remove the weekly report idea by separating goal progress and accommodations into separate views, we prioritized refining the presentation of goal progress.

Usability Test 2 (TA):

Feedback: Colors indicative of progress not noticed. User 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.

Resulting Actions: 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. Added a help button.

Usability Test 3 (Parent 1):

Feedback: The parent liked the suggestions accompanying the graphs, said overall the system could be a game changer for improving the IEP process.

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. Plus/minus drop down selectors & progress indicators: 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. 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 inputted it. Clearly Identify the Concern: 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: She associated the notify button with sending a notification to recipients instead of selecting recipients.

Resulting Actions: Changed goal representation to a simple bar with percentage. plus/minus drop down selectors were moved to the left side and the color progress indicators moved to the right. When a data point is clicked it summarizes the data the teacher inputted as well as which teacher recorded the information and the time the data was recorded. Added the ability to create new conversation from the goal progress section. Changed the notify button to the to field for recipient selections.

Usability Test 4 (Parent 2):

Feedback: Data Point Information Pop-up box: Found the information presented to be very useful. Parent would also like to know all sub-tasks performed related to this goal i.e. student will write a paragraph in under 7 minutes and have topic sentences, have fewer than 7 grammatical errors etc. Order of appearance of goals: suggested that always showing the goal of highest concerns is focusing on the negative. Goal Overall Percentage Bar: parent was confused by the over all progress bar for the Social goal. Parent commented they were unsure if the 58% was out of 100% or of the 80% which is target for this goal. Preferred Email Client: The parent prefers to have the option to receive and read conversation from IEP connect in their preferred email client. She noted that having to get online log into a the web portal remember yet another password would be barriers to reading and responding quickly to conversations. Notes (To,Cc Field): Parent would like a drop down arrow to indicate there is preset list to choose recipient from. Notes(Tags): Parent would like quicker implementations to complete the task of tags when it must be done manually. She suggested expanding/minimizing scheme and check boxes to achieve this level of quick access.

Resulting Actions: Decision to determine goal order based on which goals have the most recent data. Push conversation to preferred email clients registered by users upon account set-up. Also allow parents to respond to conversation from their personal email and capture the thread by having the parent CC IEP Connect. Notes To, Cc field given a drop down arrow. Notes tags given a expanding/minimizing scheme and checkboxes.

Digital Mockup Critique (in class):

Feedback: Suggested to use icons instead of color (for the red, yellow, green) the hierarchy wasn't crystal clear, use a vibrant coloration to mark which goal or item is the focus.

Resulting Actions: Icons were changed to the same color. The item of focus was shown in a in a more vibrant shade of orange

Final Paper Prototype

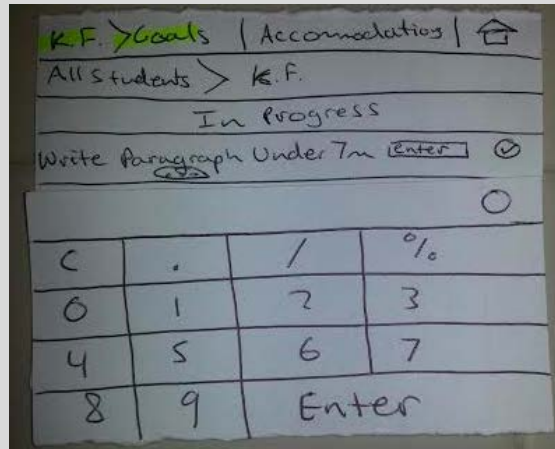
IEP-Connect: Classroom Data Collection:

Changes from initial design:

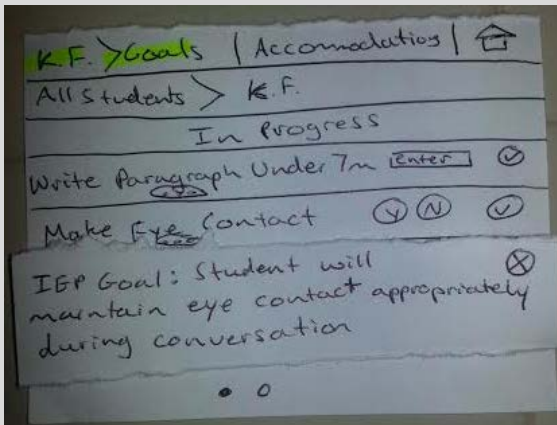
- Improved clarity of goals that were presented by having the option to view an expanded version of the goal. This decision came from various participants confused at what was actually being tracked and what it was working towards (usability test with parent 1).
- Added two new pages, one for the goals in-progress and another for the goals already tracked so that the user can undo the goals they've submitted. After our design critique in section and having the lecture that talked about undoing inputs we decided to separate in-progress and tracked goals. This allows the user to view the history of what has been tracked and alter/ delete entries that were done incorrectly (usability test with undergraduate).
- Added breadcrumbs of sorts to the top of the interface to allow quick selection of going back to previous pages. This idea was also added after the design critique in section to have the ability of going to previous pages (in class usability test).
- Changed the submission interaction; instead of tapping to submit a goal tracking, they would swipe right. This was chosen as a way to take advantage of the touch screen capabilities of the design, to simplify the speed of the interaction when submitting multiple goals. Imagine if you are entering multiple yes/no goals. Before you would hit yes or no then tap submit for each entry. Now you can go down the list hitting yes/no then swipe right once to submit all of the entries. Additionally the swiping tracked entries to the right corresponds well with the previously tracked entries being stored on the right page (usability test undergraduate).



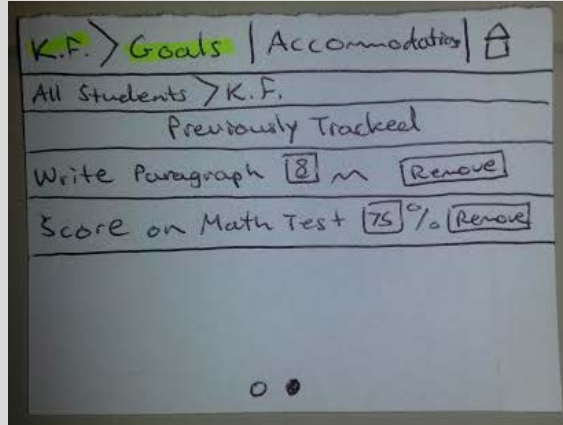
System Overview: Teachers enter passcode to enter home screen and from there can navigate to individual student goals and accommodations



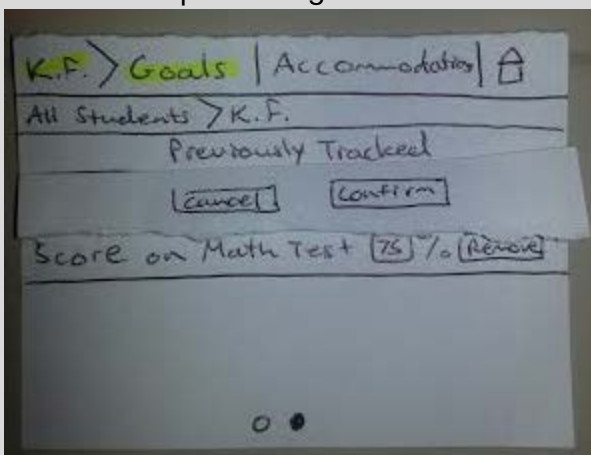
View of data entry via pop up calculator, Teachers hits the check to record data



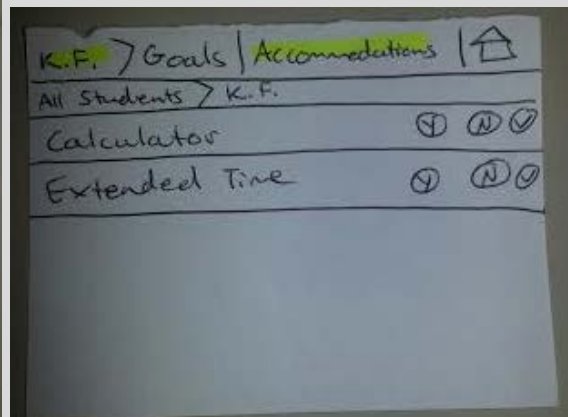
View of clicking on expanded view to read complete IEP goal.



View after swiping to tracked goals view.



View after clicking remove option to edit previously entered data.



View of accommodations tracking.

IEP-Connect: Parent Portal

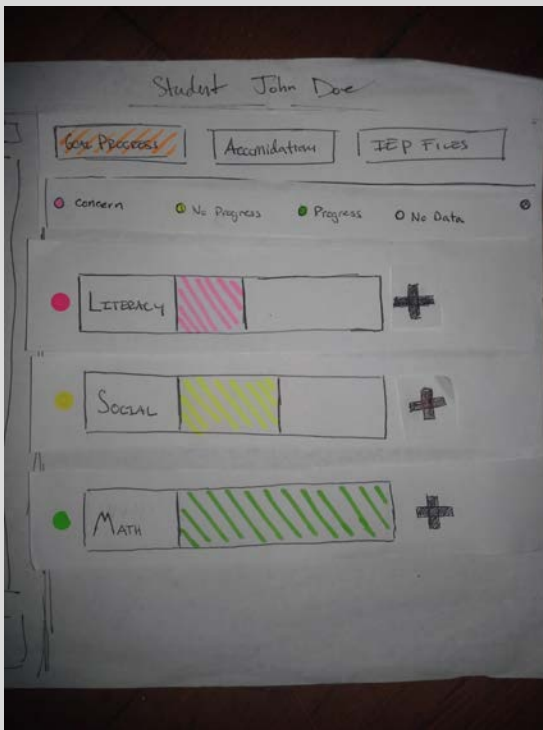
Focus 1: Presenting Goal Progress

Changes from initial design:

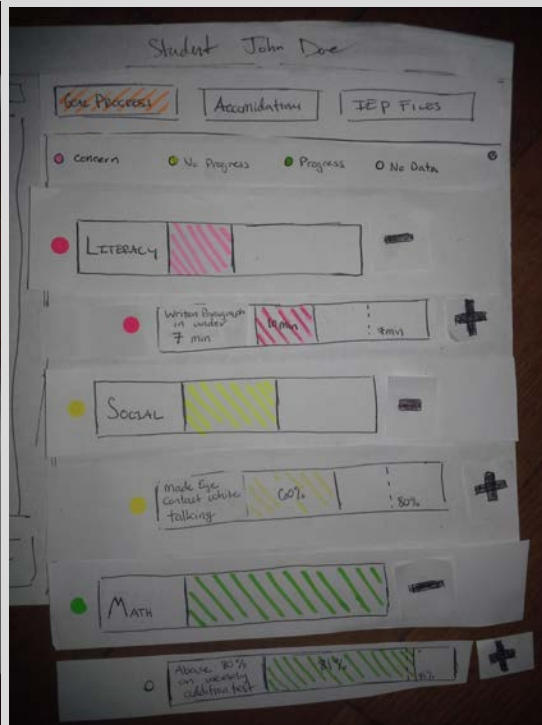
- Added more descriptive labels to the graphs after confusion in class design critiques about what was being measured.
- Moved the y-axis to the left side of the graph to be consistent with conventions. This change was made after an in class critique.
- Removed the accommodations timeline from underneath the goal progress section to simplify the amount of information relayed at one time. In our first in class usability test the participants were confused when asked to navigate the timeline. They tried to navigate the goal section instead.
- We added a legend to give information about what the colors indicate for goal progress.
- Changed arrow drop downs to plus and minus signs. When a lot of things were expanded participants became confused by the direction of the arrows.



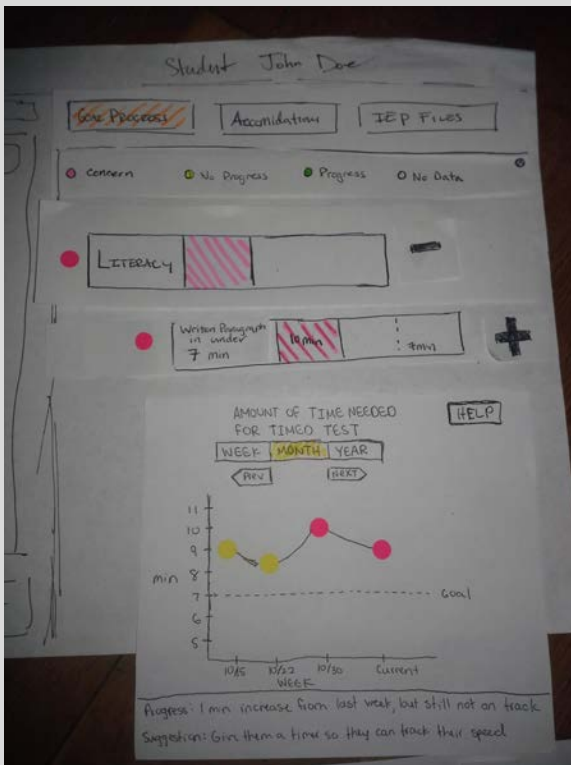
IEP Connect: Parent Portal Continued



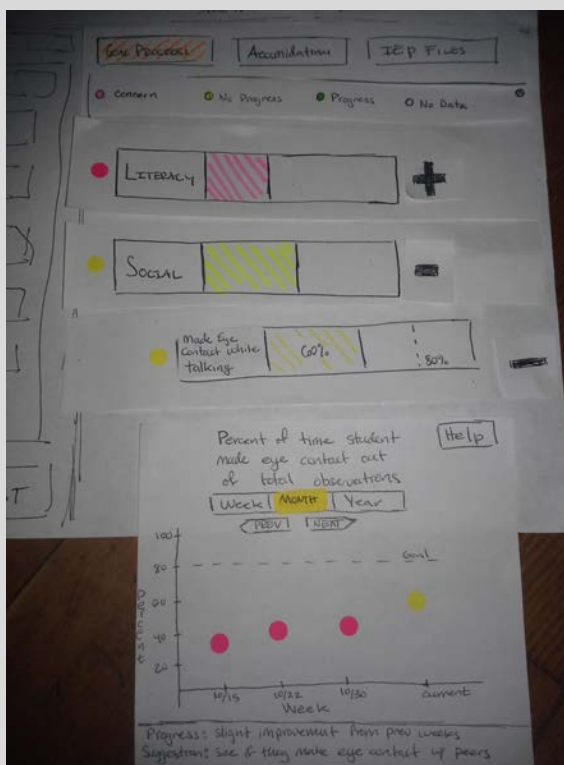
Default View of Goal Progress



After pressing the plus sign on every section

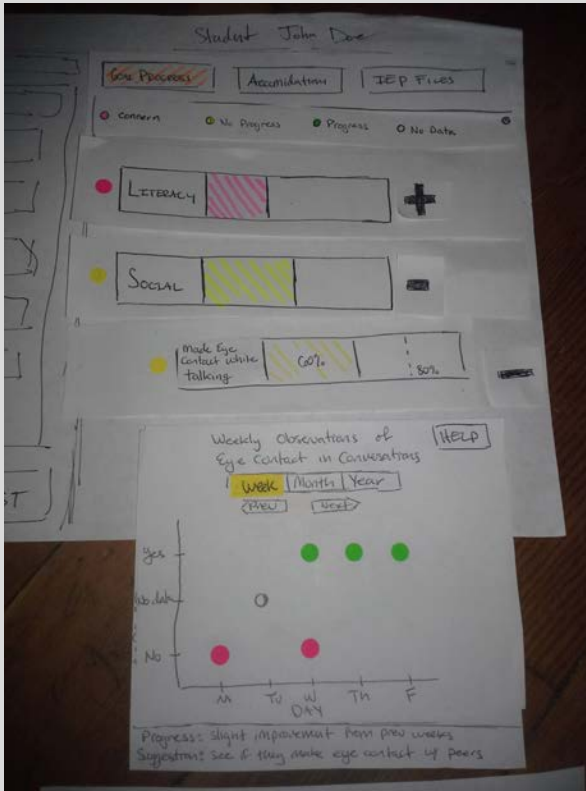


Expanding the literacy subtask (note: the plus should be a minus)

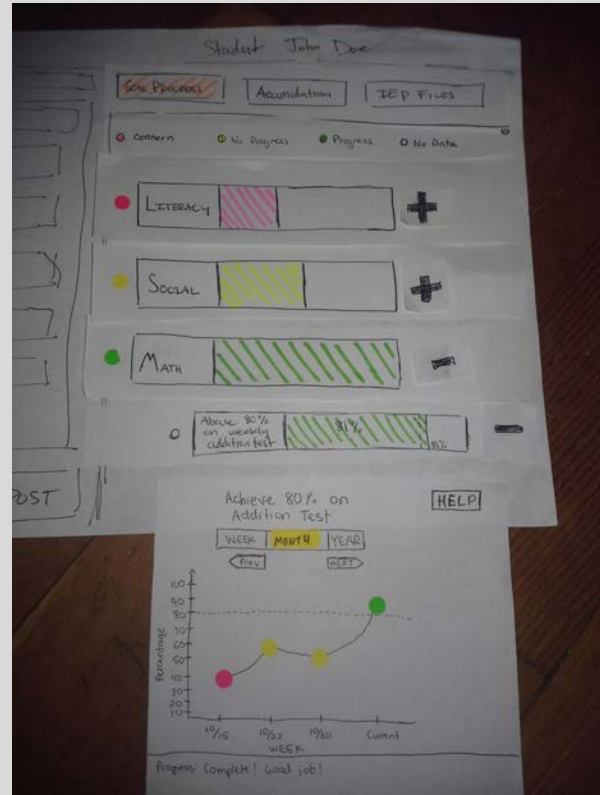


Expanding the social subtask (note: there should be lines on graph)

IEP Connect: Parent Portal Continued



Clicking on weekly view







Expanding Math subtask

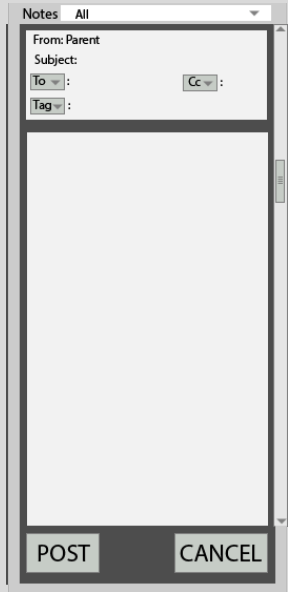

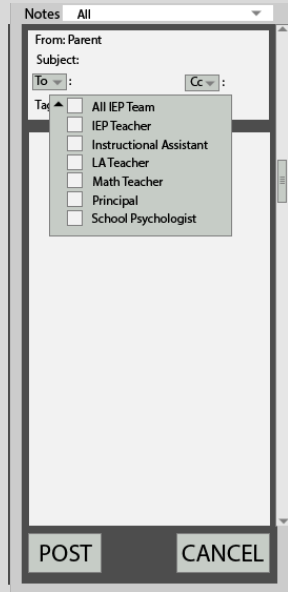

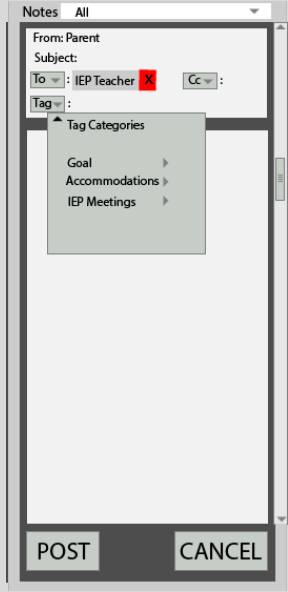
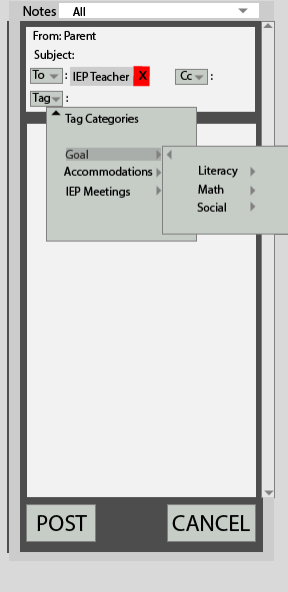
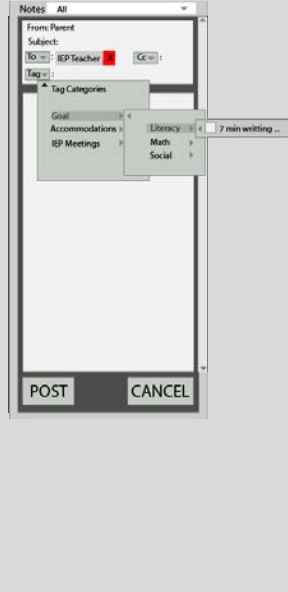
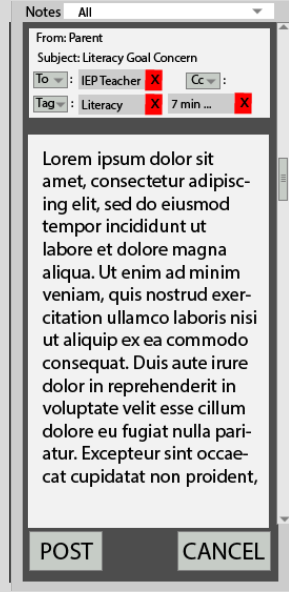
IEP Connect: Parent Portal

Focus 2: Conversations between IEP members

Changes from initial design:

- Notes given a sleeker design to fit more on the screen.
- Split screen design of the note section was changed to view that featured the notes and showed the new notes screen only when a new was created.
- Notify Button was replace with “to” and “cc” field
- Cancel Button added to allow option to quit without sending
- Recipient and Tag removal added

<p>Default Note screen when parent enters the parent view portal Shows all notes.</p>	<p>Parent navigates to Literacy goals and the notes auto sort showing only literacy related notes.</p>	<p>Parent navigates to Social goals and the notes auto sort showing only social related notes.</p>	<p>Parent navigates to Math goals and the notes auto sort showing only math related notes.</p>
			
<p>When parent click the “New Note” button they are taken to this screen</p>	<p>Parent enters subject line</p>	<p>Parent clicks on Notify to select which IEP member to send the note to.</p>	<p>Closes the drop down menu</p>

			
<p>Parent Clicks on Tag and select an IEP Goal. These tags will be used for reports and sorting</p>	<p>Parent Clicks on select the specific IEP learning area and then selects the goal. Tags will be used for reports and sorting</p>	<p>Parent clicks on Tag and select the specific goals. These tags will be used for reports and sorting</p>	<p>Parent loses the menu and adds enters the body of the note.</p>
			
<p>Parent post new note and is returned to the main notes screen with their latest post at the top</p>			

Notes																									
<p>Notes All NEW NOTE</p> <table border="1"> <thead> <tr> <th>Conversation</th> <th>Date</th> </tr> </thead> <tbody> <tr> <td>Literacy Goal Concern by Parent</td> <td>11/10/14</td> </tr> <tr> <td>Addition Test Results by Mrs. Green</td> <td>11/10/14</td> </tr> <tr> <td>Calculators on test by Mrs. Green</td> <td>11/03/14</td> </tr> <tr> <td>Writing Homework by Mr. Brown</td> <td>10/29/14</td> </tr> <tr> <td>Upcoming IEP Mtg. by Mrs. Green</td> <td>10/29/14</td> </tr> <tr> <td>Home Sick Today by Parent</td> <td>10/28/14</td> </tr> <tr> <td>Classroom visit by Mr. Black</td> <td>10/25/14</td> </tr> <tr> <td>Extra time HW1 by Parent</td> <td>10/20/14</td> </tr> <tr> <td>Psychological Eval by Mrs. Thompson</td> <td>10/15/14</td> </tr> <tr> <td>Exp. Contract update by Mrs. Green</td> <td>10/09/14</td> </tr> </tbody> </table>	Conversation	Date	Literacy Goal Concern by Parent	11/10/14	Addition Test Results by Mrs. Green	11/10/14	Calculators on test by Mrs. Green	11/03/14	Writing Homework by Mr. Brown	10/29/14	Upcoming IEP Mtg. by Mrs. Green	10/29/14	Home Sick Today by Parent	10/28/14	Classroom visit by Mr. Black	10/25/14	Extra time HW1 by Parent	10/20/14	Psychological Eval by Mrs. Thompson	10/15/14	Exp. Contract update by Mrs. Green	10/09/14			
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Digital Mockup

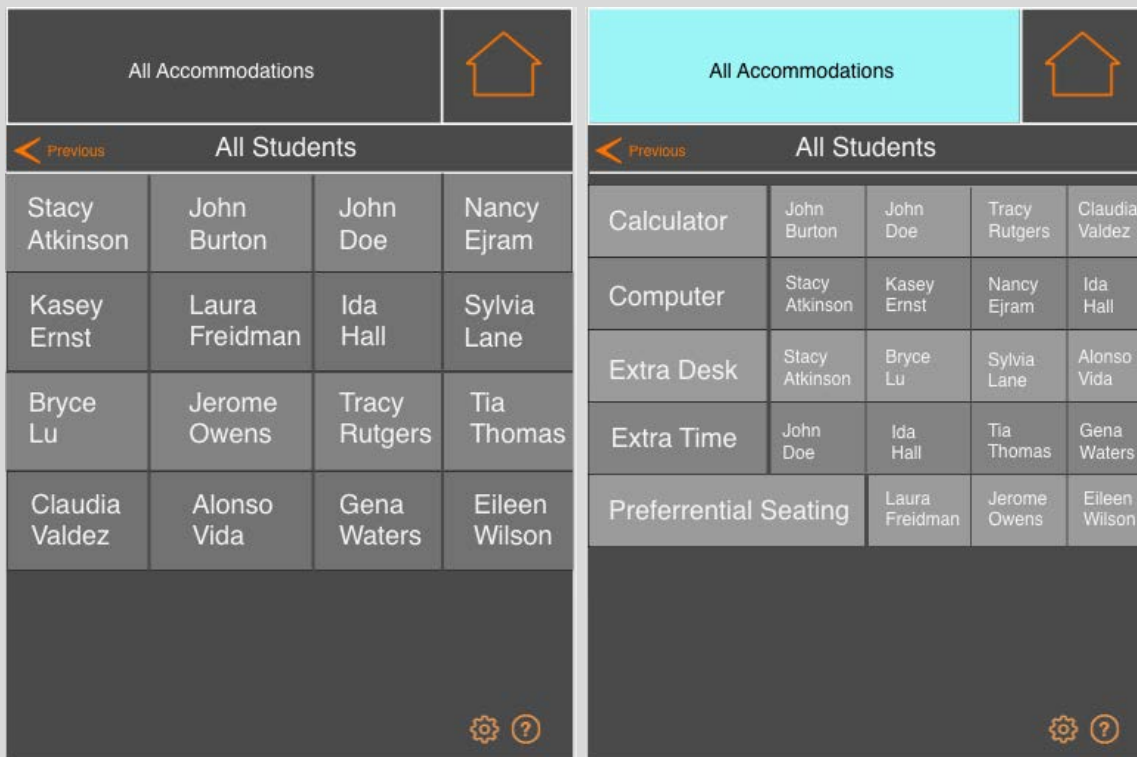
IEP-Connect: App Tracker

Focus: Timely data collection aide for teachers

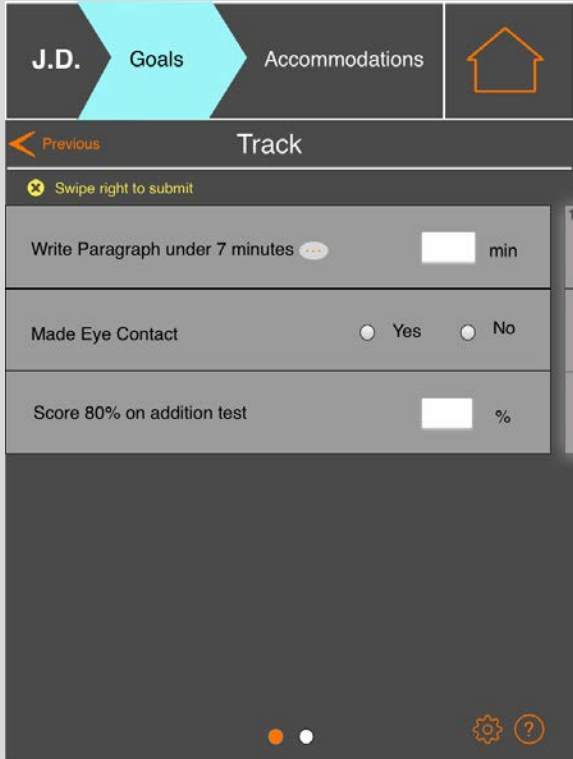
Teachers with tablet access are able to track IEP goals in a systematic way using IEP-Connect. With this app teachers don't need to worry about remembering on which piece of paper they wrote down an incident of goal progress, they can simply click to the student profile and quickly record this information in real time. With regular app usage, the growth of information to share and analyze between parents and teachers concerning IEP progress is guaranteed to increase.

Changes from paper to digital design:

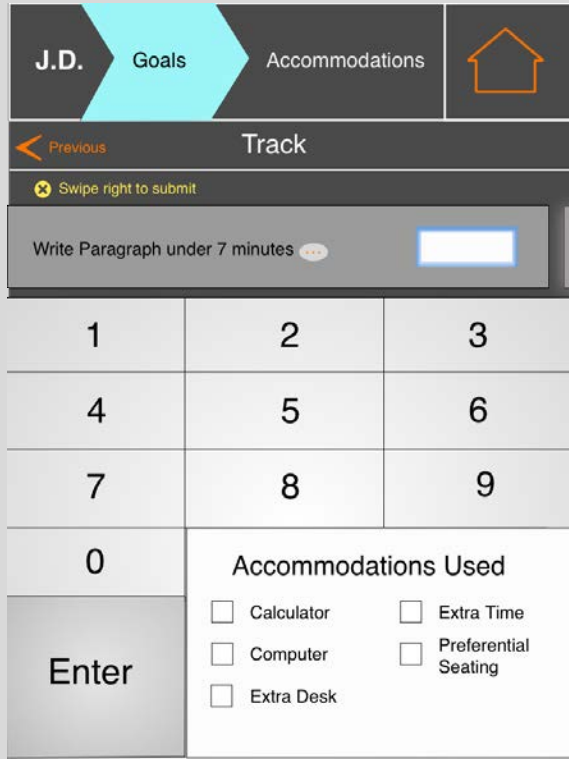
- Faded side screens to show swiping capabilities better.
- Incorporated "previous" button
- Incorporated a "settings" button
- Color coordination with web view (blue/orange) suggested from digital critique



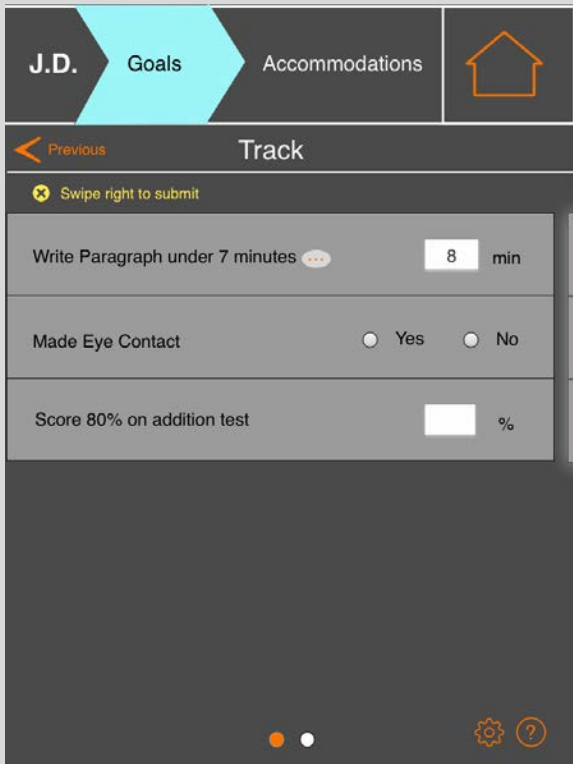
Home Screen displays full student names. Viewing accommodations grouped by tool. Teachers would have the option to customize this view to display initials or full names.



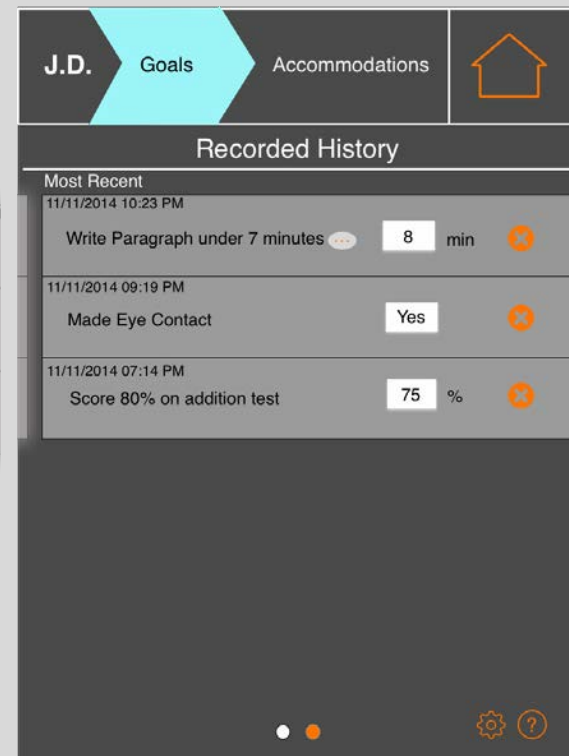
Viewing specific student's goals in initial view.



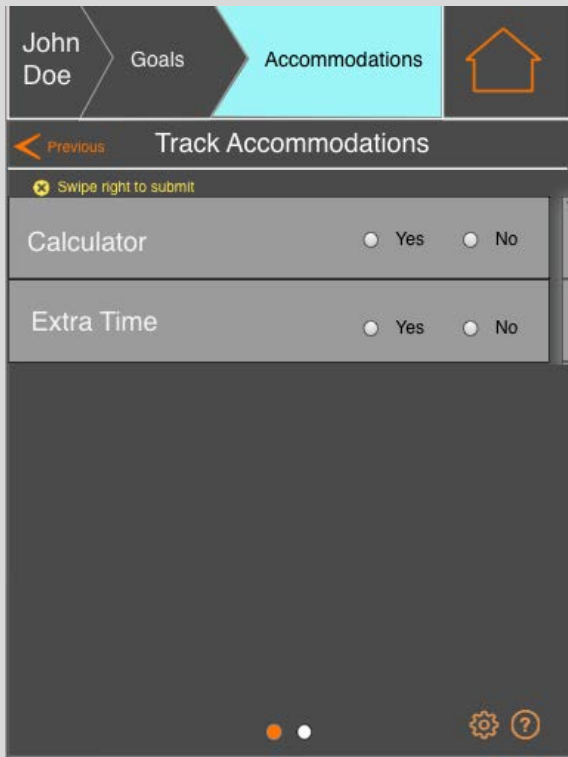
Entering data for targeted goal.



After entering data the teacher swipes left to record the data.



Teacher swipes screen to view recorded history.



Teacher views students accommodation tracking page.

IEP-Connect: Parent Portal

With the IEP-Connect web portal, parents no longer have to track-down teachers in order to receive updates on their child's progress. The parent view of the web portal syncs directly with the IEP-Connect Classroom Tracker providing real time updates to parents. Parents can see recent scores and provided accommodations in the context of the child's progress history. Additionally, the data is provided at varying levels of granularity from progress symbols to percentage of goal completed to the specific scores of a recent assessment.

The web portal also fosters open communication between all members of the IEP group by providing an interface to converse with the IEP team. The conversations are tagged with their topic allowing the conversations to be filtered by category allowing quick updates on IEP topics, and ensuring valuable information in conversations can be found later.

Changes

Focus 1: Presenting Goal Progress

- moved the expanders to the left side to be consistent with other applications. This was in response to critique from a parent usability test.
- Stripped all color from the graphs and progress bars due to confusion in usability test about what the color indicated, ex: 34% concern
- used only symbols to represent progress instead of color after critique in section to use less colors on our interface.
- changed the first drop down to show recent test scores instead of another progress bar
- added a trendline to the graph and added the ability to click on a data point to see more information about what was tracked. This was added after parent was trying to click on data points during the usability test.
- added the ability to create a new conversation from the graph on the right that will autofill the conversation tags. This was added after a parent didn't want to navigate back and forth in a usability test.

Focus 2: Conversations between IEP members

- Changed the word "Note" to "Conversation" to better convey the interaction.
- Added a draft button
- To, Cc field given a drop down arrow
- Tags given an expanding/minimizing scheme and checkboxes. This was added after critique from a parent that it should be a lot simpler to add the tags. We decided to make it consistent with the goal progress navigation.

A Web Page

← → ↻ http://

IEP-Connect Settings | Logout
 Individual Education Tracking for IEPs Student: John Doe

Conversations All ▾ Goal Progress | Accommodations | Timeline | IEP Files

Conversation	DATE
Field Trip Permission slip by Parent	11/14/2014
Addition Test Results by Mrs. Green	11/03/2014
Calculators on Test by Mrs. Green	10/30/2014
Writing Homework by Mr. Brown	10/29/2014
Upcoming IEP Meeting by Mrs. Green	10/29/2014
Home Sick Today by Parent	10/28/2014
Classroom Visit by Mr. Black	10/28/2014
Extra Time on HW1 by Parent	10/25/2014
Psychological Evaluation by Mrs. Thompson	10/20/2014
Incentive Program by Parent	10/15/2014
Graphic Organizer for Pers... by Mr. Brown	10/10/2014

Goal Progress ! Concern ● No Progress ★ Progress ○ No Data

	Literacy	34%	
	Social	58%	
	Math	90%	

Home page view of goal progress and all conversations

A Web Page

IEP-Connect Individual Education Tracking for IEPs Student: John Doe Settings | Logout

Conversations All search Create a New Conversation

Conversation	Date
Writing Homework by Mr. Brown	10/29/2014
Graphic Organizer for Pers... by Mr. Brown	10/10/2014

Goal Progress Accommodations Timeline IEP Files

Concern No Progress Progress No Data

Literacy 34% **!** Help

Goal: Write a paragraph in under 7 minutes Info **!**

Current Assessment: 12 min	Previous Assessment: 8 min	Previous Month Avg: 8 min
----------------------------	----------------------------	---------------------------

Social 58%

Math 90%

Click on Literacy drop down, conversations filter based on what you are looking at

A Web Page

IEP-Connect Individual Education Tracking for IEPs Student: John Doe Settings | Logout

Conversations All search Create a New Conversation

Conversation	DATE
Writing Homework by Mr. Brown	10/29/2014
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Goal Progress Accommodations Timeline IEP Files

Concern No Progress Progress No Data

Literacy 34% **!** Help

Goal: Write a paragraph in under 7 minutes Info **!**

Current Assessment: 12 min	Previous Assessment: 8 min	Previous Month Avg: 8 min
----------------------------	----------------------------	---------------------------

Amount of Time Needed to Write a Paragraph

Date (Day-Month)	Minutes
3-Oct	8
8-Oct	9.5
13-Oct	9
18-Oct	7.5
23-Oct	8
28-Oct	12

Minutes

Month 3 Months Year

Current

Goal

Date (Day-Month)

Concern: John has recently taken a lot more time to write a paragraph
 Suggestions: Talk to the teacher to see why they think this is happening

Create New Conversation

Click on sub goal drop down to view the graph

A Web Page

IEP-Connect Individual Education Tracking for IEPs

Student: John Doe

Settings | Logout

Conversations All search

Create a New Conversation

Conversation	DATE
Writing Homework by Mr. Brown	10/29/2014
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Goal Progress Accommodations Timeline IEP Files

Concern No Progress Progress No Data

Literacy 34%

Goal: Write a paragraph in under 7 minutes

Current Assessment: 12 min	Previous Assessment: 8 min	Previous Month Avg: 8 min
----------------------------	----------------------------	---------------------------

Amount of Time Needed to Write a Paragraph

Score:	12 minutes
Teacher:	Mrs. Green
Date:	30 - Oct - 2014
Time of entry:	2:15 pm
Accommodations:	Special Paper, Timer

Concern: John has recently taken a lot more time to write a paragraph
 Suggestions: Talk to the teacher to see why they think this is happening

Create New Conversation

Click on data point to view the specifics of what was tracked

A Web Page

IEP-Connect Individual Education Tracking for IEPs

Student: John Doe

Settings | Logout

Conversations All search

Create a New Conversation

To: Mrs. Green

Cc:

Subject: Literacy Goal Concern

Tags: Literacy 7 min

B I u ab style

Post Draft Cancel

Goal Progress Accommodations Timeline IEP Files

Concern No Progress Progress No Data

Literacy 34%

Goal: Write a paragraph in under 7 minutes

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 Suggestions: Talk to the teacher to see why they think this is happening

Create New Conversation

Click "Create New Conversation", conversation autofills based on what you are looking at on right

A Web Page

IEP Connect
Individual Data Collection for IEPs

Student: John Doe

Settings | Logout

Conversations All search

Create a New Conversation

Conversation	DATE
Literacy Goal Concern by Parent	11/14/2014
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Goal Progress Accommodations Timeline IEP Files

Concern No Progress Progress No Data

Literacy 34%

Goal: Write a paragraph in under 7 minutes

Current Assessment: 12 min	Previous Assessment: 8 min	Previous Month Avg: 8 min
----------------------------	----------------------------	---------------------------

Amount of Time Needed to Write a Paragraph

Minutes

Month 3 Months Year

28-Sep 3-Oct 8-Oct 13-Oct 18-Oct 23-Oct 28-Oct 2-Nov

Date (Day-Month)

Concern: John has recently taken a lot more time to write a paragraph
Suggestions: Talk to the teacher to see why they think this is happening

Create New Conversation

write the note and click post

A Web Page

IEP-Connect
Individual Education Tracking for IEPs

Student: John Doe

Settings | Logout

Conversations All search

Create a New Conversation

To:

Cc:

Subject:

Tags

B I U ab style

Post Draft Cancel

Goal Progress Accommodations Timeline IEP Files

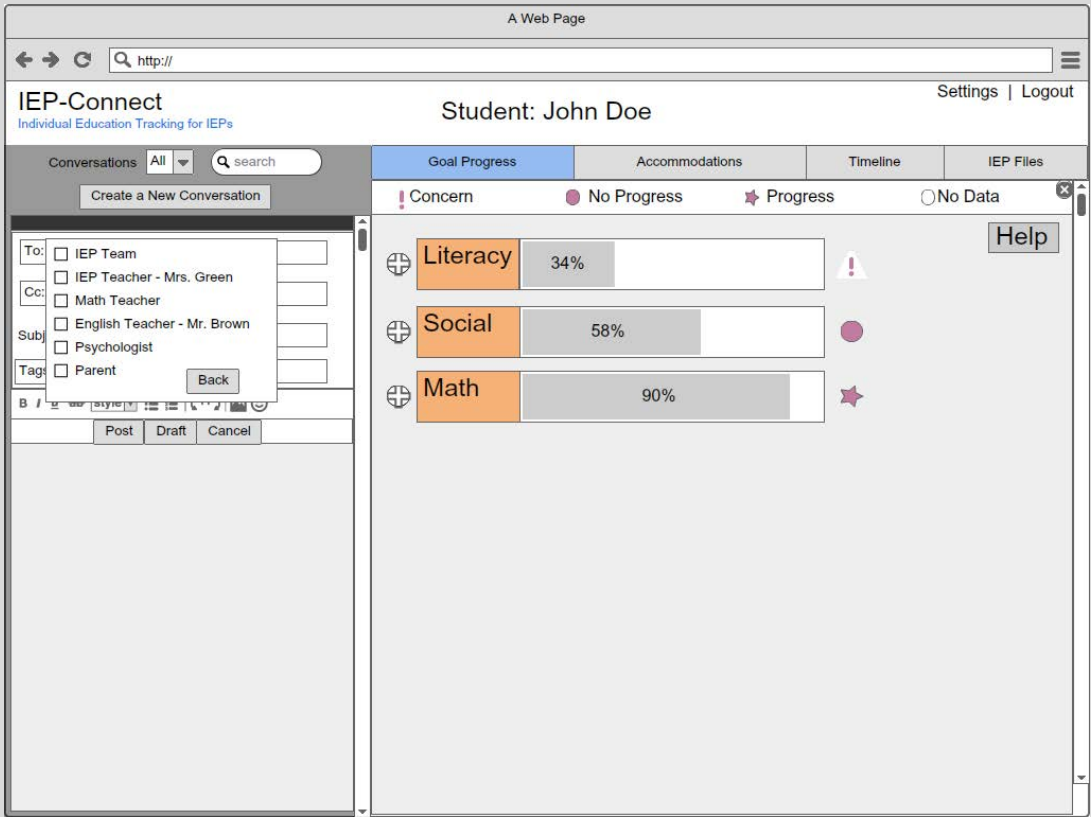
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Literacy 34%

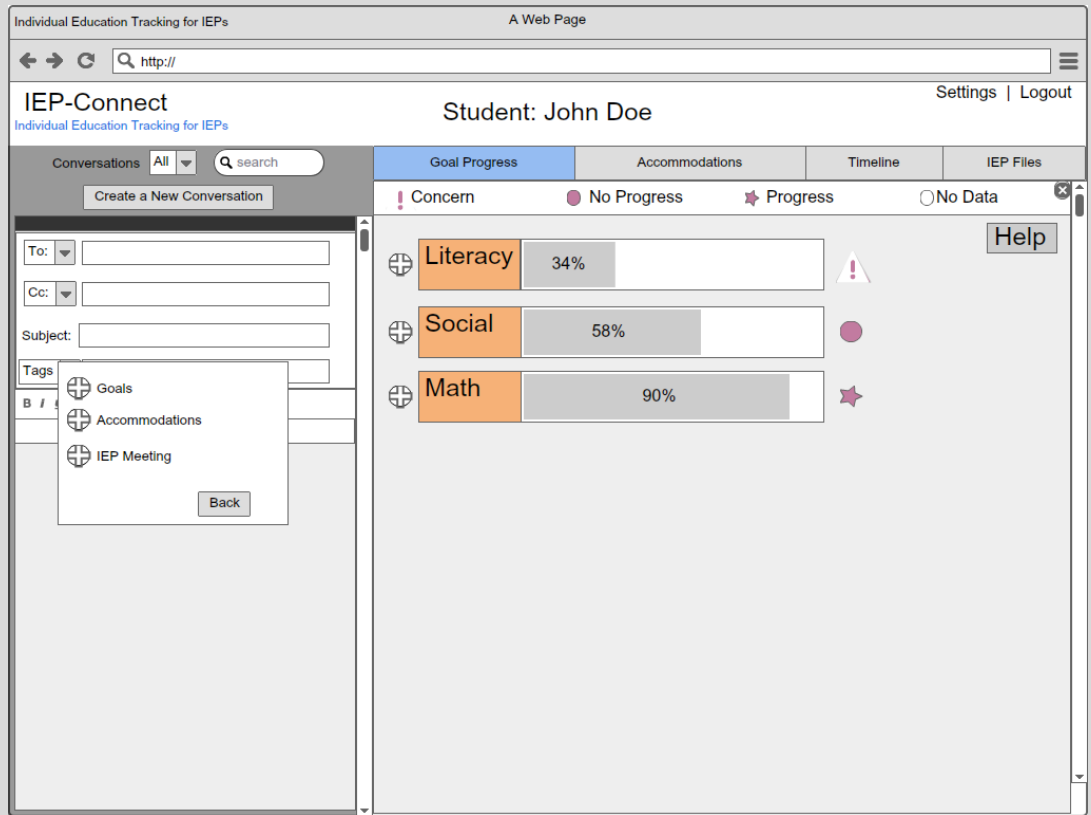
Social 58%

Math 90%

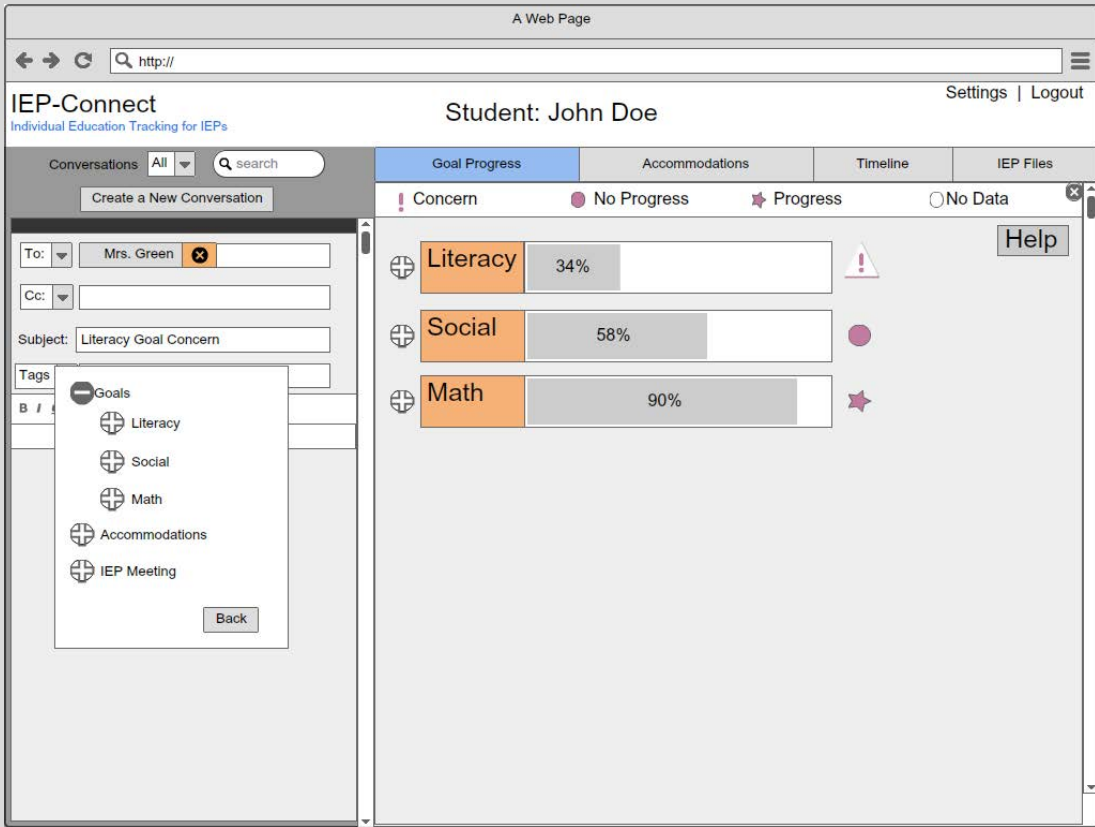
Create new conversation from home screen



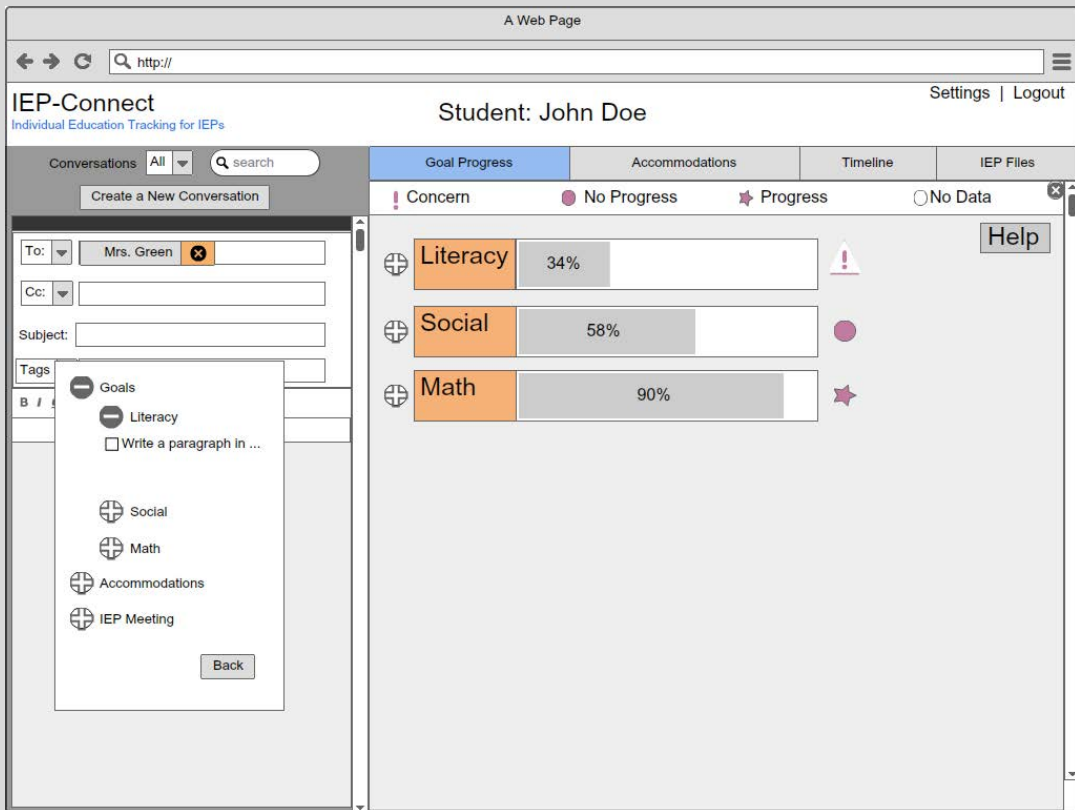
Select "To" field



Select "Tags"



Click on "Goals"



Click on "Literacy"

Discussion

Our initial project idea was a Google drive equivalent to share documents and comments between stakeholders. However, it was pointed out that our idea lacked a 'niche' that made it different from the current technologies that these stakeholders could readily use. After going through our contextual inquiries again, we found that the major underlying problem was the lack of data collection and data visualization. We decided that our product would focus heavily on helping teachers collect the information and having an intelligent product that would analyze and display meaningful data to all stakeholders. Thus, we decided to call our product IEP-Connect.

The scope of our project was an issue due to the time constraints in this class. IEPs are a mandated government document, which shows just how complicated it could get and the amount of stakeholders invested in this document. Our project therefore, did not have one target consumer, but rather three different stakeholders that had different product requirements. Our new project idea included a data collection system for teachers, and a webapp with teacher and parent interfaces to encourage communication between them. Given the time constraints, we were only able to mock up the teacher data collection system and the parent view of the webapp. This was a disappointment to us since the teacher view played an equally big part in the product idea we are developing, and the lack of teacher view raised concerns during some of our usability tests.

The original paper prototype we had come up with is almost unrecognizable from our digital mockups. Our original tasks included asking the participant to use the data collection system to log a specific student's goal. The second task asked the participant to use the webapp to identify the student's weakest progress. Although our tasks did not change drastically from our paper prototype to our digital mockup, the context in which these tasks were performed became more refined.

Our first few usability tests included participants that were not our target stakeholders. This was due largely to the fact that we were under pressure to do more usability tests but lacked the time to find a parent or teacher under such short notice. Although they were not our target stakeholders, we got great feedback on our interactions and our data visualizations. This led to minor changes in our paper prototype, such as breadcrumbs and adding/deleting tracked submissions. After doing usability tests with our target stakeholders however, we found their feedback much more useful. They pointed out flaws that we had forgotten about from our initial CI's, such as displaying more specific information about points on the graph from the data collection system we implemented. By doing these usability tests, our group gained a deeper understanding of why these tests need to be with participants within our target audience. After each usability test, we sat down with the group and talked about our next design iteration. A lot of the feedback we had gotten from the three usability tests made it into our digital mockups. If we had more time, we would have done at least two more usability tests and iteration on our product.

Overall, I think our product benefitted greatly from the usability tests and design iterations. In hindsight, our initial paper prototype lacked a lot of important features that would have made our final product difficult and unusable.

Appendix



A special thank you to all our wonderful participants throughout our project!!