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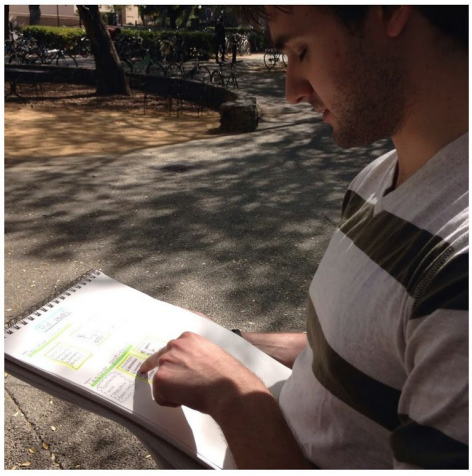
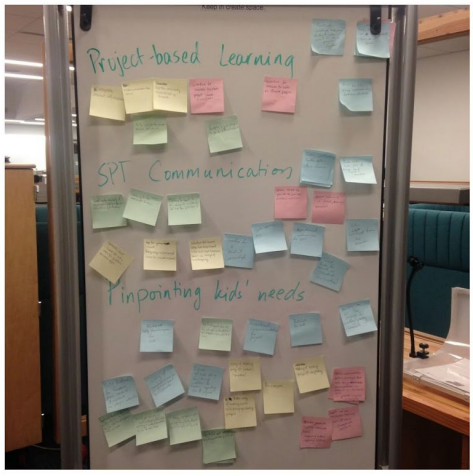
Assignment 2 - POVs & Experience Prototypes

Team EduConnect





Introduction

Our focus is on the elementary school learning/education space. We chose to focus on elementary schools because of the lack of resources and strong effect of primary education on later life.

Problem Domain

The three sub-areas we wanted to think about were classroom management, information flow, and building friendly environments. The common theme between these is *communication*. How do students, parents, and teachers communicate and interact with each other and their peers?

Initial POVs

We originally started with two POVs - one for children and for adults (parents/teachers).

- We met Prof. Ellis who needs to homeschool his child because of irreconcilable differences with his child's teacher over grading and structure of schoolwork. It would be game-changing if we could facilitate productive and responsive conversations between teachers and parents in the elementary school setting.
- We met Zilan, a 6th grader, who needs learning to be interactive and fun because of the way she likes to engage with information. It would be game-changing if we could make schoolwork more hands-on and active for young children.

Additional Needfinding Results

Last week,, we spoke to two children, three parents, and one teacher in the elementary space. This week, we talked to two more students.

- The first student we interviewed was Brandon Hill, a senior at Stanford in Public Policy. We heard his reflections on his education looking back and discovered what motivated him and caught his interest as a child. During our 30 min interview, he traced his current involvement in social justice with a project he did in 4th grade - "The Banana Project" - which made him aware of the struggles of child workers who pick bananas. He mentioned that it was the first time he motivated himself to excel at a class project and enjoyed school. The lack of similar projects until high school caused him to become less interested in school until he took his own

initiatives for social justice. From this, we inferred that introducing a child to diverse topics early-on can spark life-long interests in other areas.

- The second student we interviewed was Shalini Rao, a 5th grader in Cupertino. We were able to interview her because she is Priyanka's sister and spoke to her for 20 min (without Priyanka, to avoid bias). Shalini mentioned that science is her favorite class because of the experiments. She also said that her teacher doesn't check learning during class and communication with her teacher happens over email and is slow. The websites she interacts with on a daily basis are Gmail, Edmodo (Q/A), and her class website. From this, we inferred that information from teachers comes from a variety of sources and is slow and also that children really love to engage in projects.

Revised POVs

Our additional needfinding reinforced our initial insights that communication can be lacking between students, parents, and teachers (Shalini) and that projects serve to actively engage children in school (Shalini & Brandon).

1. We met Ivan, Zilan, and Brandon, current and former public school students. We were amazed to find that they all expressed feelings of empowerment and engagement as a result of project-based coursework. It would be game changing to make project-based work the centerpiece of the modern classroom.
    - HMW make other academic coursework as engaging as projects?
    - HMW allow kids to continue to explore topics they are exposed to within the classroom even when they are at home?
2. We met Professor Ellis, a professor at Stanford and parent of a homeschooled child and Rachel Baker, former teacher and current professor at UC Irvine. We were amazed to find how lapses in communication can lead to educational failure. It would be game changing to facilitate conversations inside and outside the classroom.
    - HMW make conversation between parents and teachers more regular, responsive, productive, and friendly?

- HMW help parents and students attain information/help from teachers after school-hours?

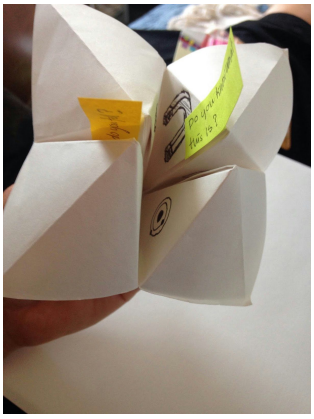
3 Best HMWs

- How might we incorporate academic curriculum into interactive and collaborative projects? (POV #1)
- How might we use technology to strengthen the student-parent-teacher relationship? (POV #2)
- How might we identify and incorporate a child's interests into coursework to increase ownership and engagement? (POV #1, #2)

3 Experience Prototypes

1. Visual Poll

We created a visual poll that teachers can use to check student's understanding of material and gain feedback on lessons. We built a fortune teller that creates interaction between students and teachers.



Assumptions

- Children are more comfortable working with pictures than words.
- Feedback helps teachers create better learning environments.

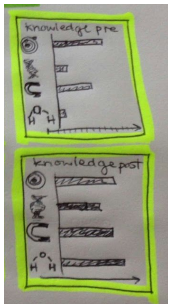
Making

We first made a sketch of a basic layout of a poll. To make the actual poll, we made a fortune teller that allows hands-on interaction. The first part of the prototype had smileys with different moods and the next had pictures of science objects (we chose science arbitrarily as the subject for the poll). Finally, there are detailed explanations about the science objects under each picture.

Testing

We tested the prototype with Shae, a 6th grader, and Andrew, a Stanford student. The scene we tested in was inside Tressider with Shae and inside an empty classroom with Andrew. The prop was the fortune teller. With Shae, she was the student and we were the teacher. With Andrew, he was the teacher and we were the student. Before giving a mini-lesson, we first asked how they felt and if they knew all the science objects. After the mini-lesson, we asked how they felt and if they knew the science objects.

What Worked



- The visual representation - there were no questions about how to use it with both Andrew and Shae
- Andrew felt the graph that a teacher would receive based on a student's response was helpful

What Didn't Work

- Repeating the same questions before and after about mood/understanding didn't really make sense to Shae.
- Andrew didn't understand the point of the emotion question.

Insights

- The emotions of students before/after lessons doesn't seem to provide much actionable info to teachers.
- While having pictures helps students easily communicate their thoughts, it can also limit the range of options they have to choose from.

Assessment of Assumptions

- The assumptions we made both held true because children find pictures more intuitive and teachers need feedback to create better lessons.
- A new assumption we have is that feedback in the form of data is very helpful to teachers.

2. Student-Parent-Teacher Communication Interface

We prototyped a way for students, parents, and teachers to see all course-related information in one spot.

Assumptions

- People prefer having useful resources and services in one spot.
- Teachers have a hard time making class pages and would prefer an easy template they can use readily.
- People like modularity and multi-tasking with services they already use.

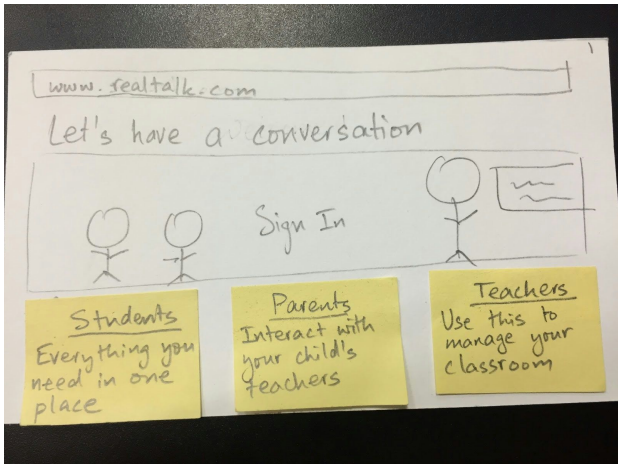
Making

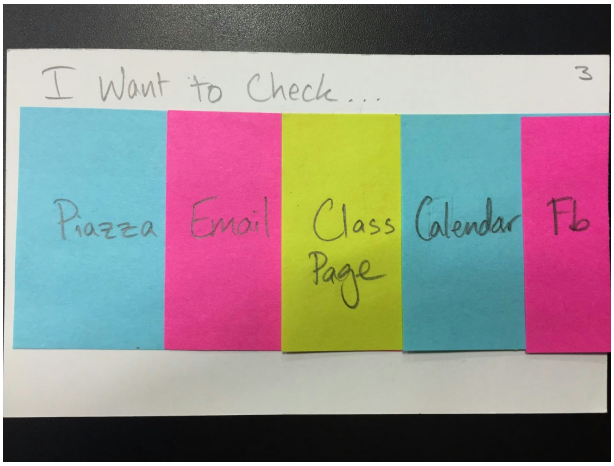
First, we brainstormed what services students/parents/teachers use or might find helpful - a Q/A website like Piazza/Edmodo, a friend-finding website like Facebook, email, class pages, and a calendar. We showed how all these services would be integrated on a set of flashcards that we also added colored sticky notes too to encourage interactivity.

Testing

We went to two playgrounds in Palo Alto and a street fair downtown and tested our prototypes with one child and another parent. We unfortunately weren't able to test in the

home environment this solution is intended towards. The roles the child and parent played were people interacting with their phones or laptops. We asked them to start from the first index card and observed how they went through the interface.





What Worked

- Having everything in one spot
- Letting students and parents and teachers interact with each other on the class page and piazza

What Didn't Work

- Integrating FB into the interface (parents don't always want to communicate with other parents because some parents can talk too much)
- Having the calendar separate from the class page when it could be more relevant embedded into the class page

Insights

- People can have too much communication. Different people have different levels of interaction with their peers they are comfortable with.
- Being able to ask questions to teachers after school is important to both students and parents.

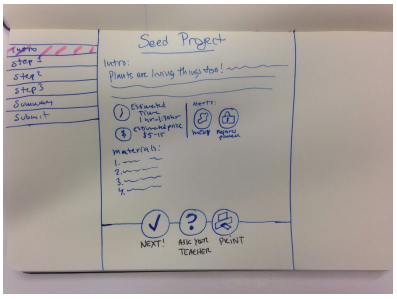
Assessment of Assumptions

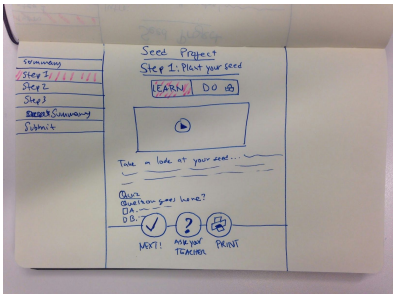
- Our assumptions mostly held true.
- Parents do like to multi-task but they prefer to group similar services together (calendar and class page, for example).
- Parents/children both like to have everything in one spot so things are not lost.
- We could not test our assumption that teachers like easily usable class templates since we were not able to meet any teachers.

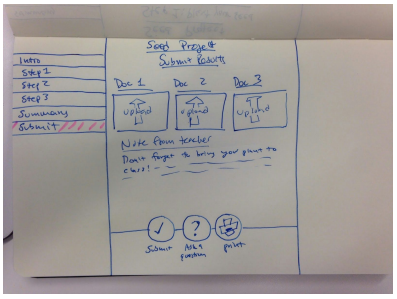
3. Project Organizer

Assumptions

- Parents work with their kids on projects
- Parents and students prefer info about projects to be in one place
- Parents prefer the info to be online so it's not lost on the way home from school







Making

First we thought of how teachers assign projects. Then we mapped that concept onto the computer screen, also adding tools that addressed our assumptions and pain points discovered during needfinding. The experience prototype was created on a sketchbook to emulate the feeling of working on a larger screen.

Testing

We went to a street fair in Palo Alto and tested the "site" out with two parents and one child. We introduced the scenario, and told them their child arrived home with a link and instructions to complete a project. Then they were shown the homepage and asked how they felt about it's contents. Then we showed them the submission page, and asked for feedback.

What worked

- Parents were happy that the info for the project was all in one place.
- Prevented papers from getting lost on the way home.
- Parents really liked question mark tool to ask questions directly to teachers.

What didn't work

- Didn't fix problem of teachers not putting in enough info.

Insights

- We earned that one of the big problems with projects is not getting all of the information.
- Having more than one child complicates things further!

Assessment of assumptions

- Validated the assumption that people wanted things in one place.
- The timeliness of response is a huge point of concern for parents.

Most successful prototype

Everyone we tested our prototypes on said that they like having all their information in one place and that having a digital interface to do projects with would help build interest in learning outside of school. Further, people responded well to the iconology, because it seemed to address their deepest concerns. Based on this feedback, we chose the Project Organizer as our most successful prototype.