

Design Goal:

Build a cooperative nursery digitally and modern way. Combine the real world voluntary experience and digital cooperative tool together and save tons of money for family.

Key problem:

In US, the cost of preschool is insanely expensive. While some family are struggling to provide qualified care to their toddler. The early learning stage (from 3 year to 5 years) are crucial to every child.

On the other side, cooperative nursery, the monthly fee will be reduced to under \$100 per month. Families can provide basic school work instead of hiring employees, it enables the school run at a minimum cost. However, most cooperative nursery, due to the shortage of resources, are under qualities.

Can we build a cooperative nursery, with the power of technology? Can we run the nursery effectively and provide

well care? Can we use the tech to organize the school more clean and neat?

Part 2 Research Methods and Design Methods

Research Methods

I chose Topsy Toddler Cooperative Nursery as my study sample. It is small cooperative nursery located in Southgate, Michigan. I conducted couple interviews along the teacher and parents.

From my observation, this nursery is running in a very old fashion way. The communication is handed by the print folder, the school syllabus and enrollment are handed by person, the tuition is collected by person, too.

I use interview to collect basic data for user need before sketch. Then I conduct user test after initial user test. I use SUS score to evaluate the general characteristics.

Target User:

Cooperative Parents
Teacher

Overarching Questions

Schedule: How can we provide easy pick schedule?

Classroom: How can we communicate and enforce the high standard classroom?

Communication: How can we communicate more effectively, quickly ?

Enrollment/accounting: How can we provide clear enrollment instruction and provide easy tuition accounting information?

Recruiting Criteria

Group A: parents who enrolled in the cooperative nursery, currently and past.

Group B: Teachers that participated in the cooperative nursery.

Interview Protocol

Introduction

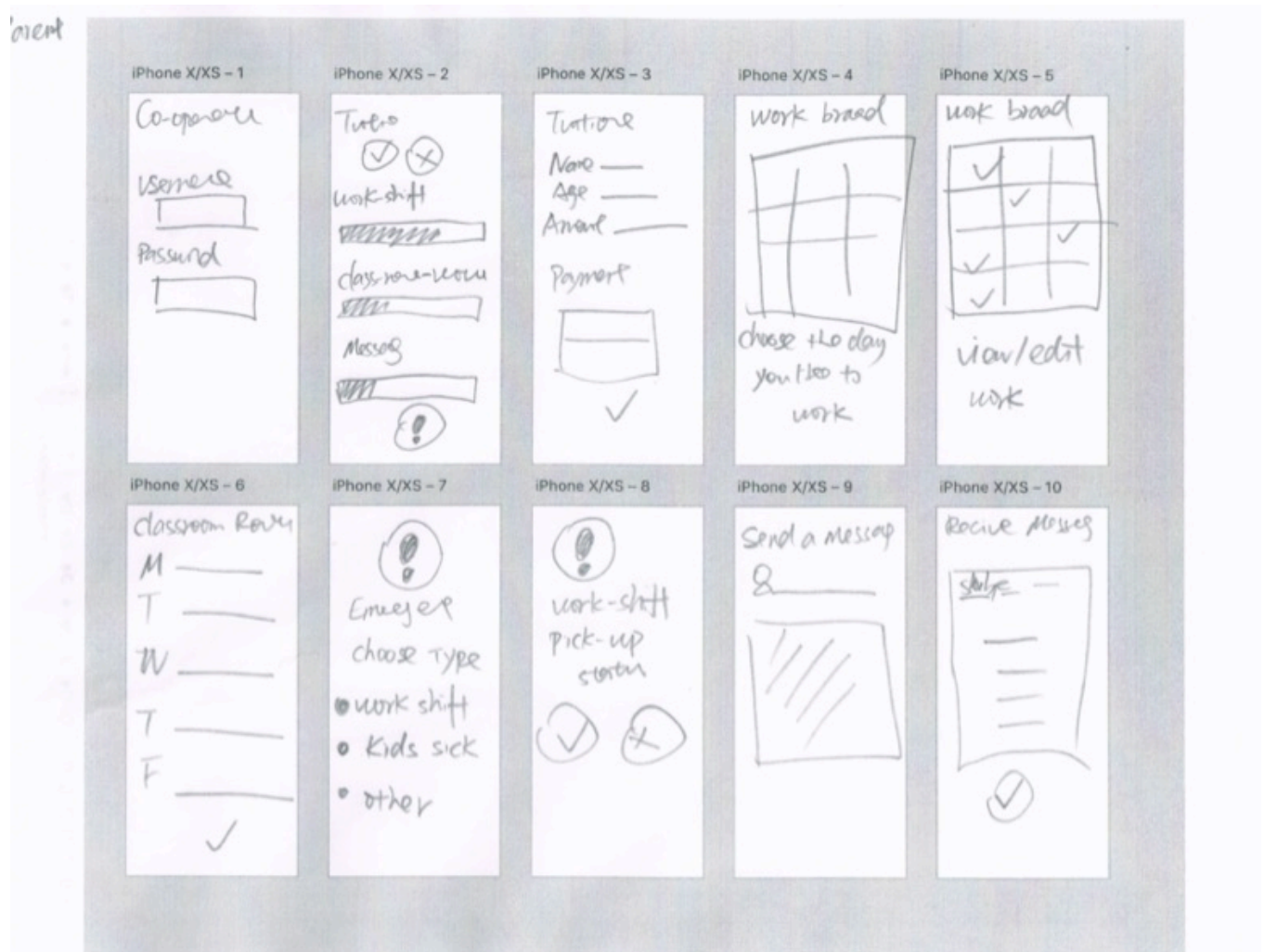
Hello, My name is Xinjuan and I would like to start a survey for our new app for cooperative nursery. The goal for today's session is to understand your experience in the cooperative nursery and how can we improve that by tech.

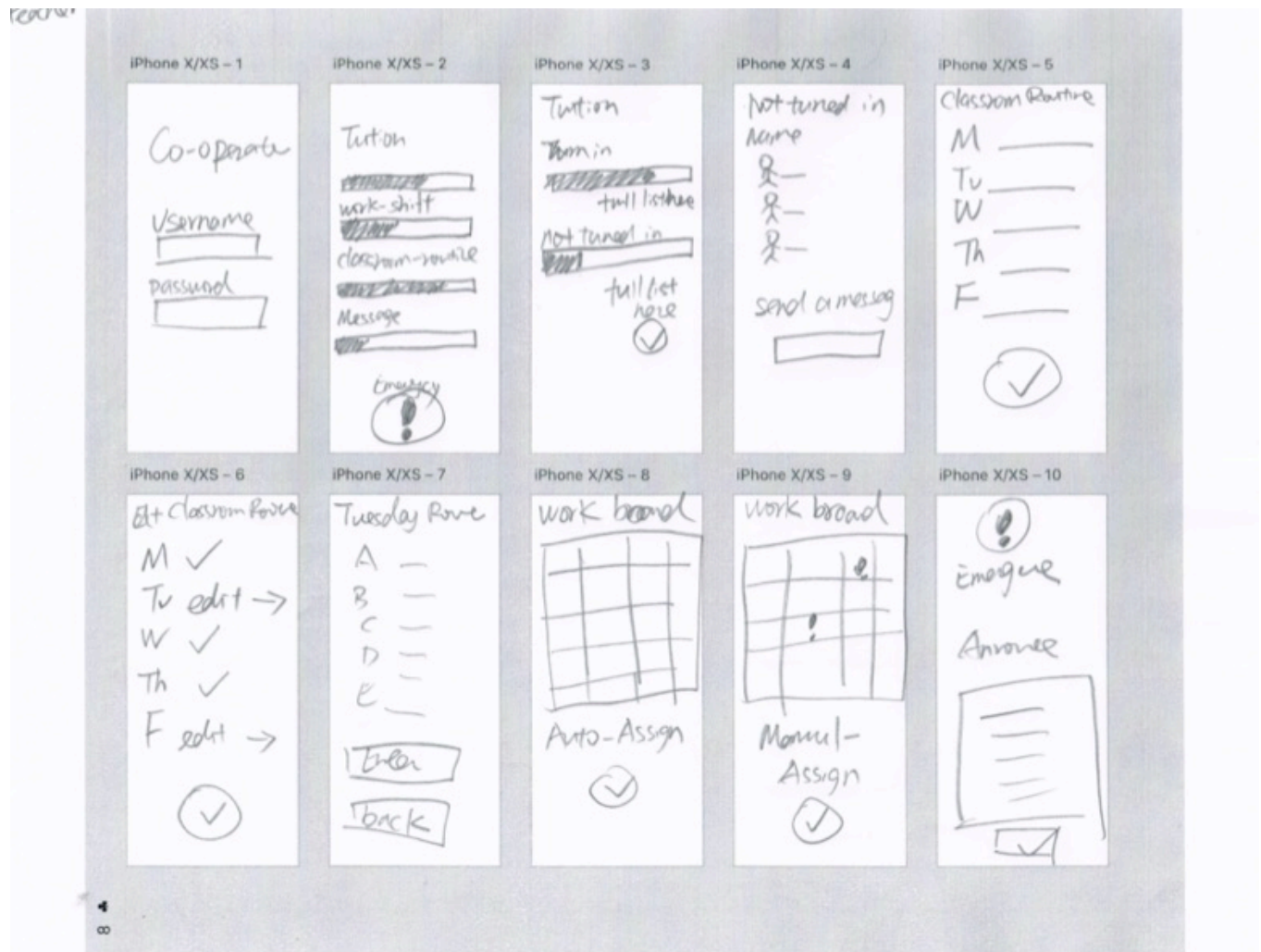
This interview will take about 30 minutes, during which time we'll go through some questions. I'm here to learn from you so I'll ask a lot of questions, but I'm not testing you. There are no right or wrong answers. I'll start this session by asking some background questions. Then I'll ask you about your recent cooperative nursery experiences

I expect the candid feedback is the most helpful. A couple of things before we start. To the extent possible, I will take your comments to be confidential. I will aggregate all the comments from the interviews I am conducting so that your comments are not easily traced to you. If I quote you in my final report, I will do so without identifying your name. If there's anything you really don't want on the record, even if it's anonymized, please let me know that, too. Also, this interview is entirely voluntary on your part – if for any reason you want to stop, please let me know. We can end the interview at that point with no repercussions for you of any kind. I can also throw out anything you've told me until that point. Do you have any questions for me? All right, then, let's proceed. Oh, and by the way, do you mind if I take an audio recording? This is just so that I don't miss anything – no one other than the research team will have access to the recording. Thanks.

Design Methods

I use paper sketch to illustrator the basic ideas.





Then I conduct user test to collect basic data from users.

The purpose of this usability test is to test initial app Cooperative Nursery prototype.

Overarching Question

Can you finish the task? Do you face any challenge finish the task? Describe the challenge.

Recruiting Criteria

Teacher and parent in cooperative Nursery.

Testing Plan

For Parents:

Task 1: Open the app, please log in the account.

View the personal broad.

Task 2: Submit Tuition

a>Find the Tuition submission button in the broad, and click in.

b> Fill out the tuition form and submit the payment.

c>Finish the payment and return to broad.

Task 3:

a>Find the work shift button in broad and click in.

b> Choose the work shift number as the broad indicated.

c>Modify the work shift one time.

Task 4: View the classroom routine

Task 5: Press emergency button and seek help

Task 6: send a message to teacher/parent using communication

For Teacher:

Task 1: Log in the account and view the management broad.

Task 2: View the tuition status and send notification to parents who didn't turn in the tuition.

Task 3: Assign the work shift for parent next week. View and edit.

Task 4: Organize the classroom routine, enter and edit.

Task 5: Press emergency button and send emergency message to parent.

Task 6: Send a message to one parent.

Task Instructions:

Print tasks and present them. Read each task aloud and give the printed questions to participant.

Observe, record and write down the logging sheet.

Observe and record any struggle participant has.

After the tasks, give the participant the SUS questionnaire.

And ask post-task questions:

1. Review parts of test where the users struggled.
2. What did the user like/dislike?
3. What would have the change you like?
4. Under what circumstance would you use this?

5. Will you recommend using it, why?

Part 3: User Needs Analysis

The current needs from parents are focused on:

1. Want to know what the kids are doing in the classroom more quick and timely
2. Want to improve school communication both in classroom and meeting
3. Want to choose the school role/pick up work shift more easily
4. Add emergency button to current schedule
5. Improve school safety including cleaning
6. Improve classroom teaching and enhance early learning

The current needs from teacher are focused on:

1. More easy control and monitor kids activity
2. More easy control tuition collection/account management
3. Improve parents communication and shorten the meeting time

System Constrains

Protect kids/ parents/ teacher private information and do not leak the user name/location for safety purpose. They are worried about the personal information leak, which can be used by some bad person.

Jovial

<https://www.jovial.org/>

Jovial is a website that provide preschool management. It support enrollment management, tuition accounting, requirement masking, etc.

From my perspective, it is well organized and has many function. However, the whole website is designed mainly for teacher management.

Therefore, I will strive to provide a platform for both parent and teacher.

From previous research, The app function will divided to two groups: parent portal and teacher portal.

For Parent Portal, the task will be:

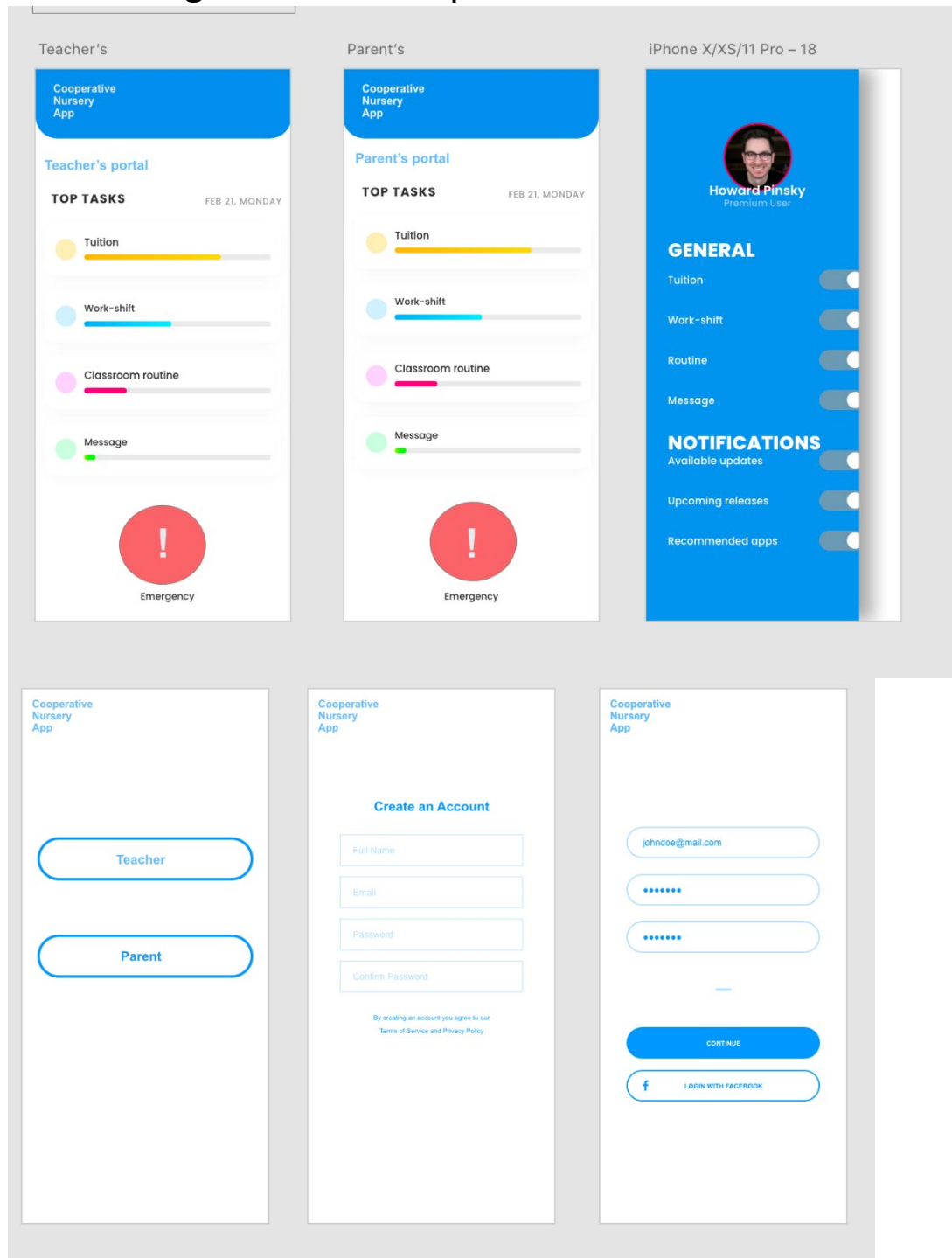
1. Log in and view personal broad
2. Tuition submission/ view
3. Work shift pick up/view
4. Classroom routine view
5. Emergency
6. Parent/teacher communication

For Teacher Portal, the task will be:

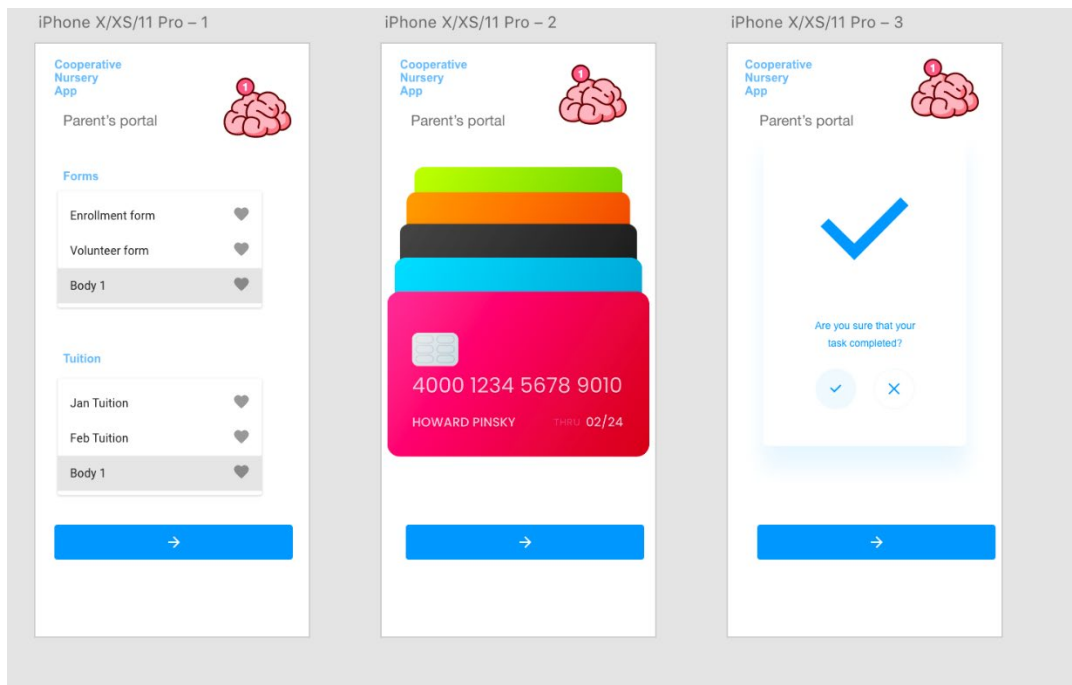
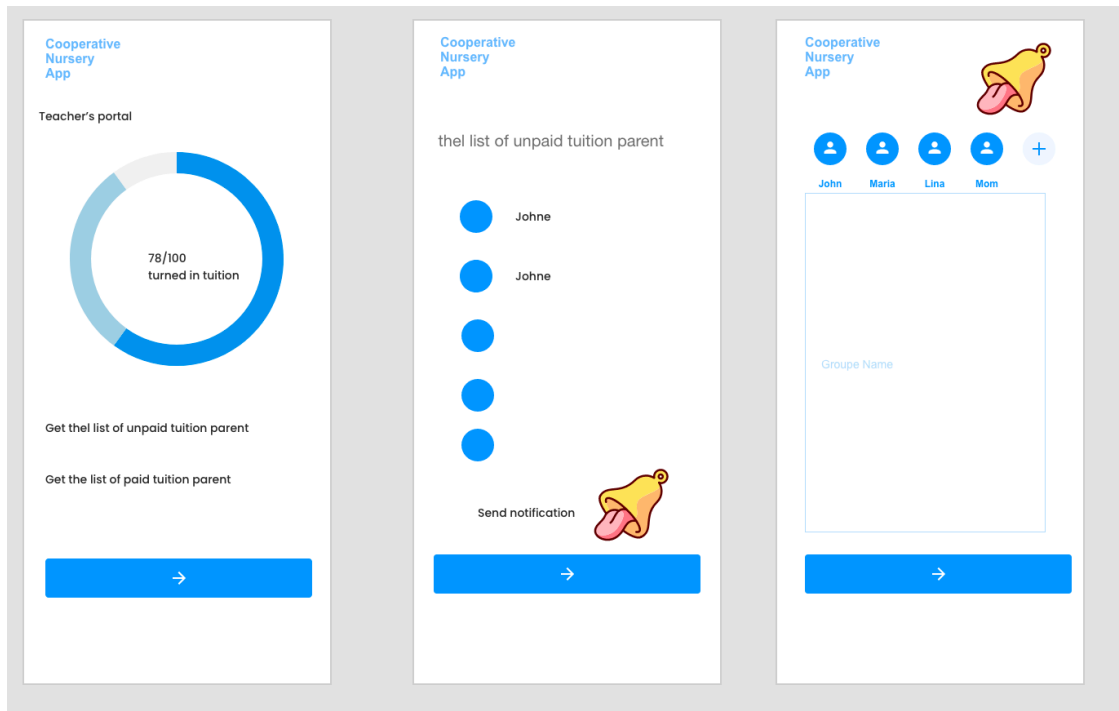
1. Log in and school broad
2. Tuition view/ tax assessment
3. Parent work shift assignment and management
4. Classroom routine edit and management
5. Emergency communication
6. Parent/teacher communication

Part 6: Prototype

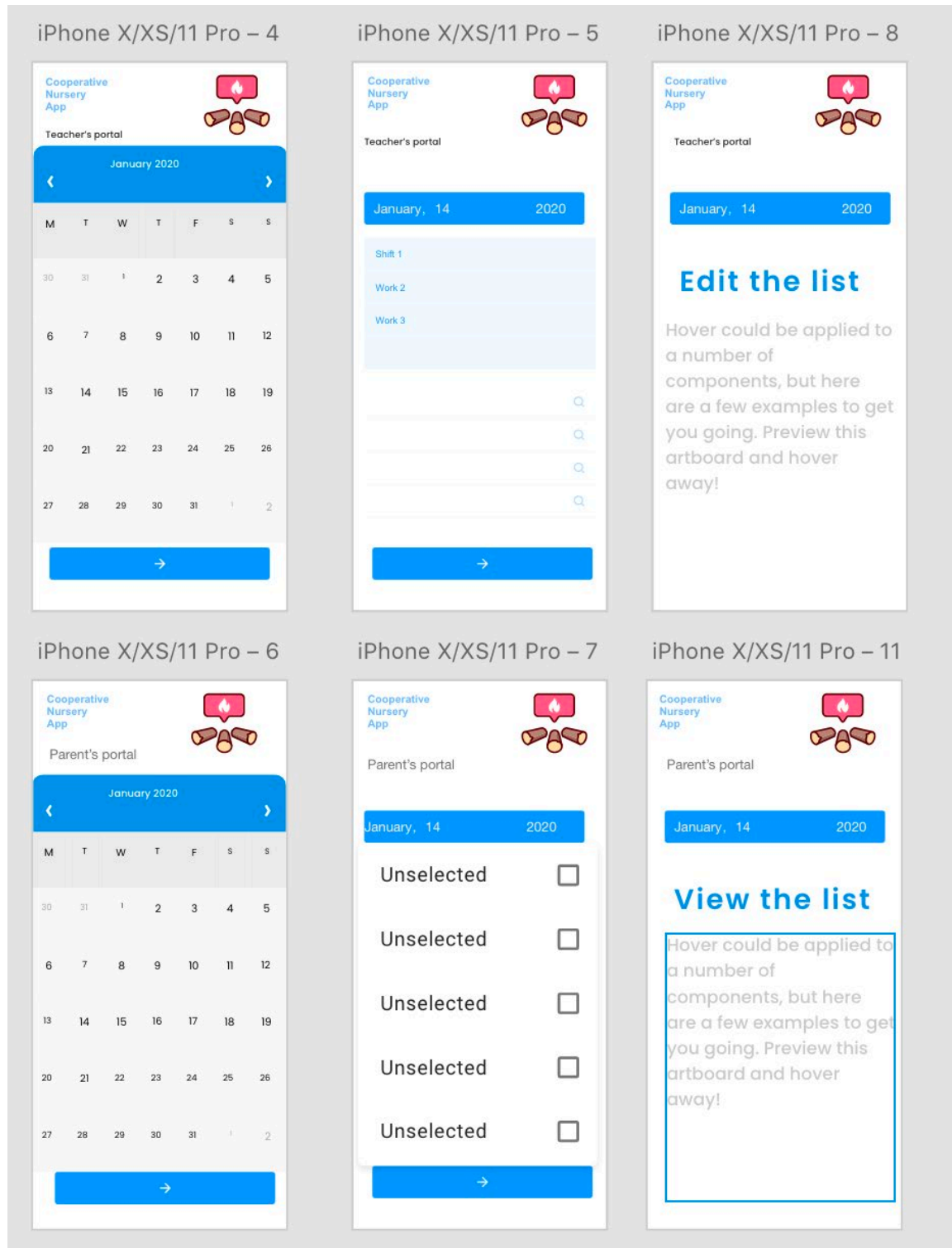
Task 1 : Login in and view personal broad



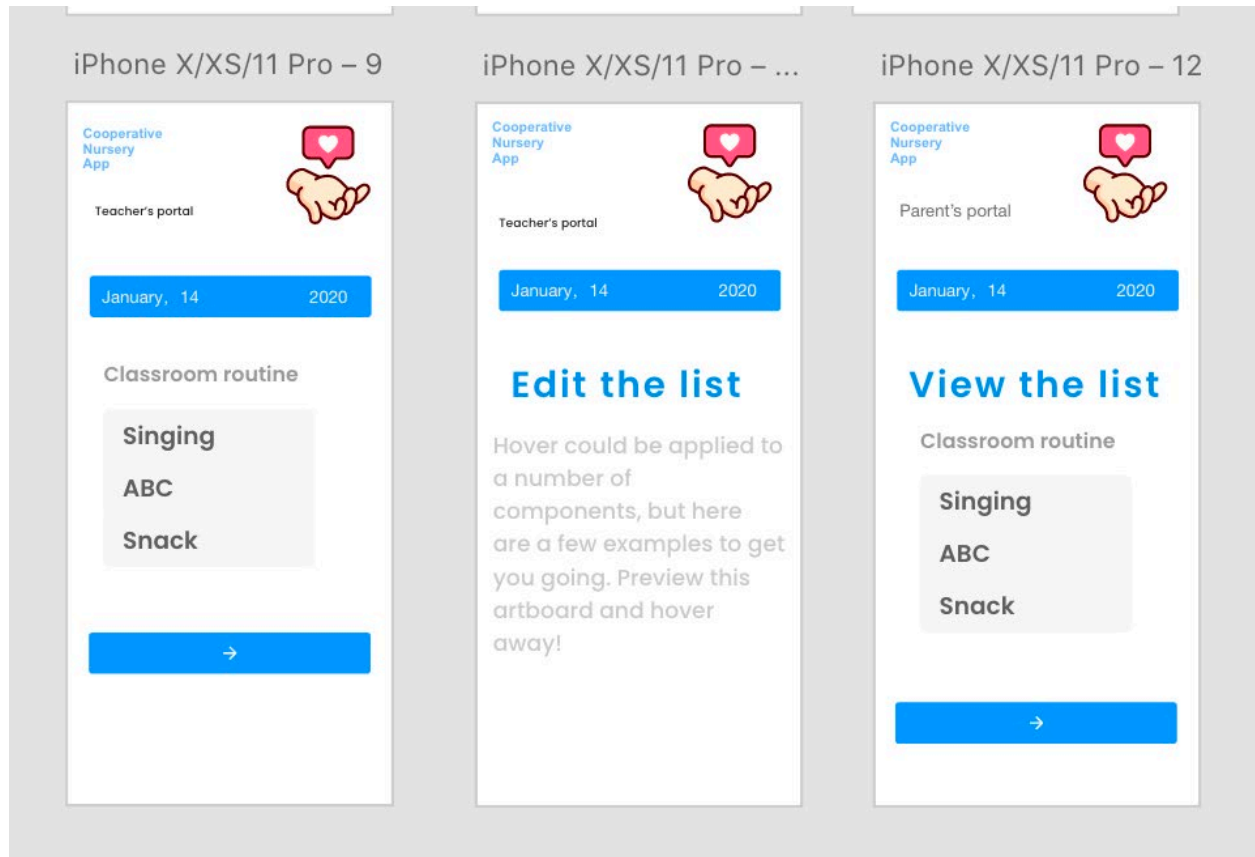
Task 2: Tuition Manage/Submission



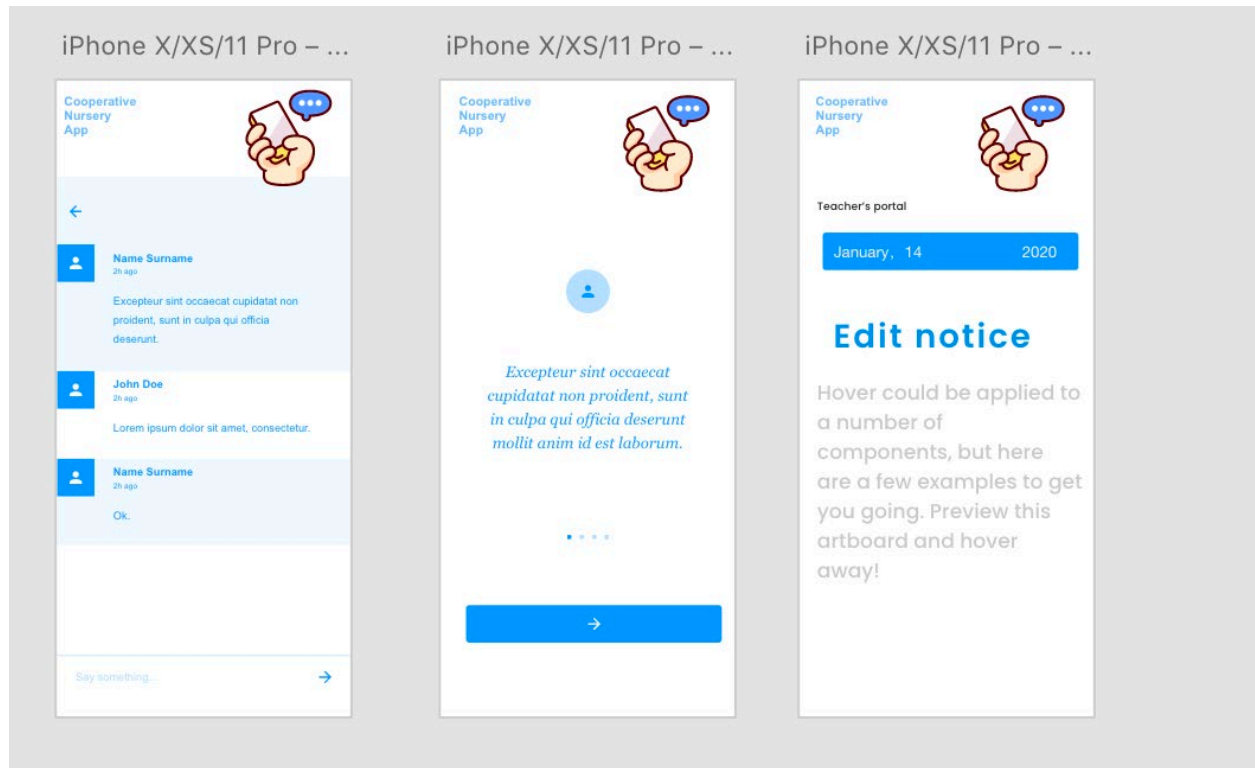
Task 3: Work Shift manage



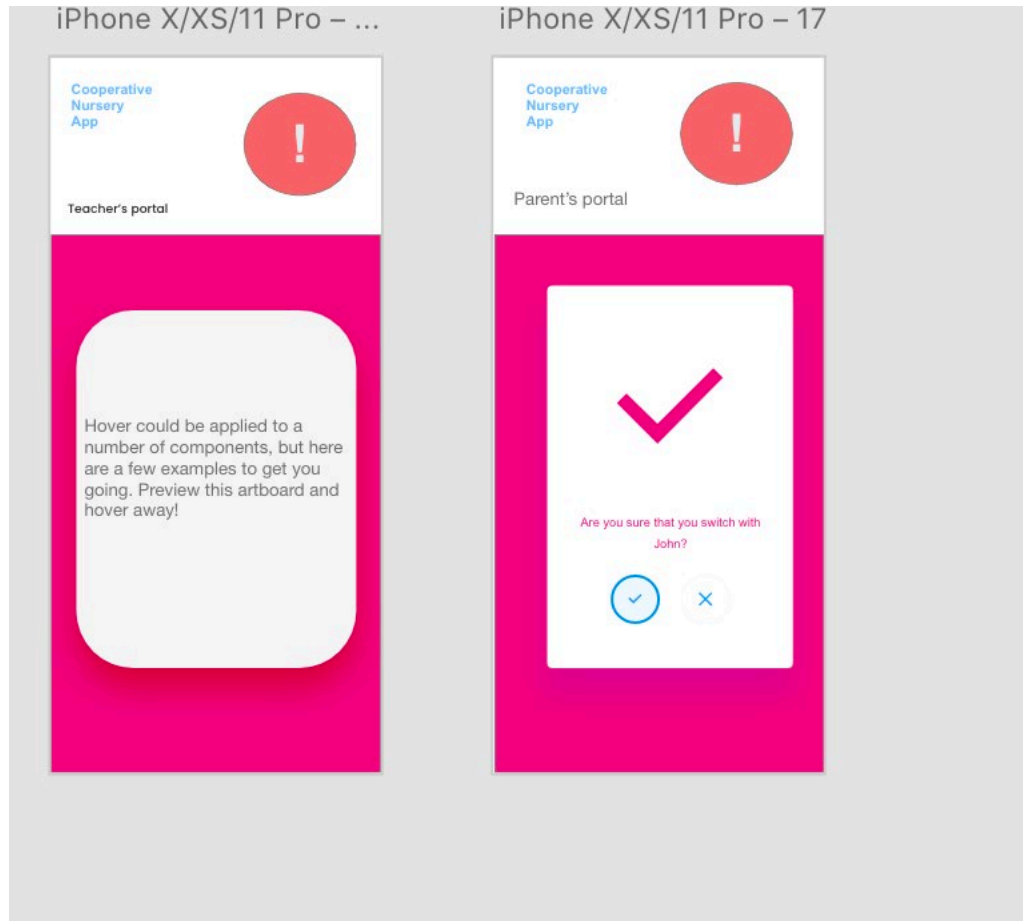
Task 4: Classroom Routine



Task 5: User Communication



Task 6: Emergency Message



Final Usability Test

The test is designed to validate the main purpose of the cooperative nursery app which is:

“Designing an affordable and easy to use method to communicate, manage the cooperative nursery effectively? And design a special emergency system to ensure the safety of the school?”

In this user test I test two sets of participants:

1. One teacher from topsy toddler cooperative nursery.
2. Two parents who actively participating in the topsy toddler cooperative nursery.

The test use the previous prototype to ask them how would them like to use the system and how satisfied about the system.

Users will be asked to perform all the following task:

1. View the personal broad and find the system functions.
2. Use the tuition system.

3. View the work shift system.
4. View the classroom system.
5. Type message to other users.
6. Try emergency button.

And after that they will be asked to fill a survey about the system.

Post-test questionnaire

Answer the following questions based on the scale of 1 -5 where 1 is strongly disagree and 5 is strongly agree

1. I think that I would like to use this system frequently
1 2 3 4 5
2. I found the system unnecessarily complex
1 2 3 4 5
3. I thought the system was easy to use
1 2 3 4 5
4. I think that I would need the support of a technical person to be able to use this system
1 2 3 4 5
5. I found the various functions in this system were well integrated
1 2 3 4 5
6. I thought there was too much inconsistency in this system
1 2 3 4 5
7. I would imagine that most people would learn to use this system very quickly
1 2 3 4 5
8. I found the system very cumbersome to use
1 2 3 4 5
9. I felt confident using the system
1 2 3 4 5
10. I needed to learn a lot of things before I could get going with this system.
1 2 3 4 5

The average SUS score for the system is low.

The main question are:

1. Add details to transition. For example, the transition between main broad to tuition.

2. Add back option to prevent error.
3. Add personal profile broad to control the data.
4. Change the icon design because it is confusing.
5. Identify different states of action.
6. Add edit option.
7. Add privacy control.

Next Steps

Overall, I feel design this system is very challenging for me. Users are more complex than I thought. They worried about private information leak and they are worried about old parent may not be able to use the system to finish the task.

If the system will work, we should consider one main question: What kind of education book/material will we use? And how can we involve it in the system easily?

Personas and Scenarios

User A: Parents in Cooperative Nursery

Angela

Demographics

Age:45

Occupation: Part-time sams club staff

Location: Michigan

Academic profile: High School

Kids age: 4 years old

Motivators

- Save kids tuition
- Have fun and safe kids activity
- Pick easy work shift in cooperative nursery

Constrains

- Work shift conflict with schedule
- Worried about kids safety in classroom
- Emergency happen and no one pick up work shift

Scenario

Angela is a single-mom raising two children. She is very busy and always struggle with schedules. Although she want to provide the best early learning to her son, she is on budget. Sometimes emergency happens and she has to skip her own work shift. She wants an easy and simple work shift pickup system for cooperative nursery.

User B: Teacher/ staff in cooperative nursery

Chole

Demographics

Age: 38

Occupation: cooperative nursery teacher

Location: Michigan

Academic profile: College

Kids age: 5 years

Motivators

- Ensure the classroom routine and improve kids early learning experience
- Easy manage school tuition/accounting
- Easy communication
- Emergency control

Constrains

- Some parents do not technology smart
- Some kids have own trouble following routines
- Not a professional tuition accounting manager

Scenario

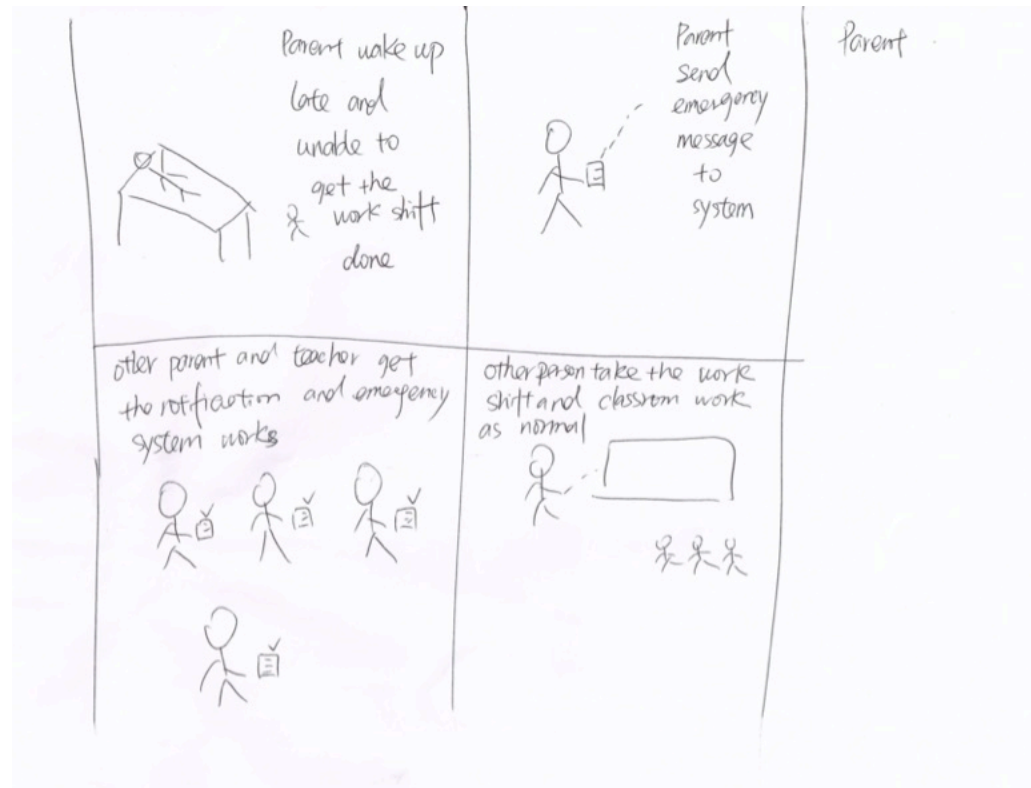
Chole is cooperative nursery teacher. She is responsible for the classroom routine and manage all kids activities. However, there are some parents couldn't follow the routine correctly. And There are emergency happen all the time. Chole also manage the tuition collect. She has limited financial management experience so she has a lot of struggles.

Sketch and Ideate (Storyboard)

Storyboard 1 (ideally)

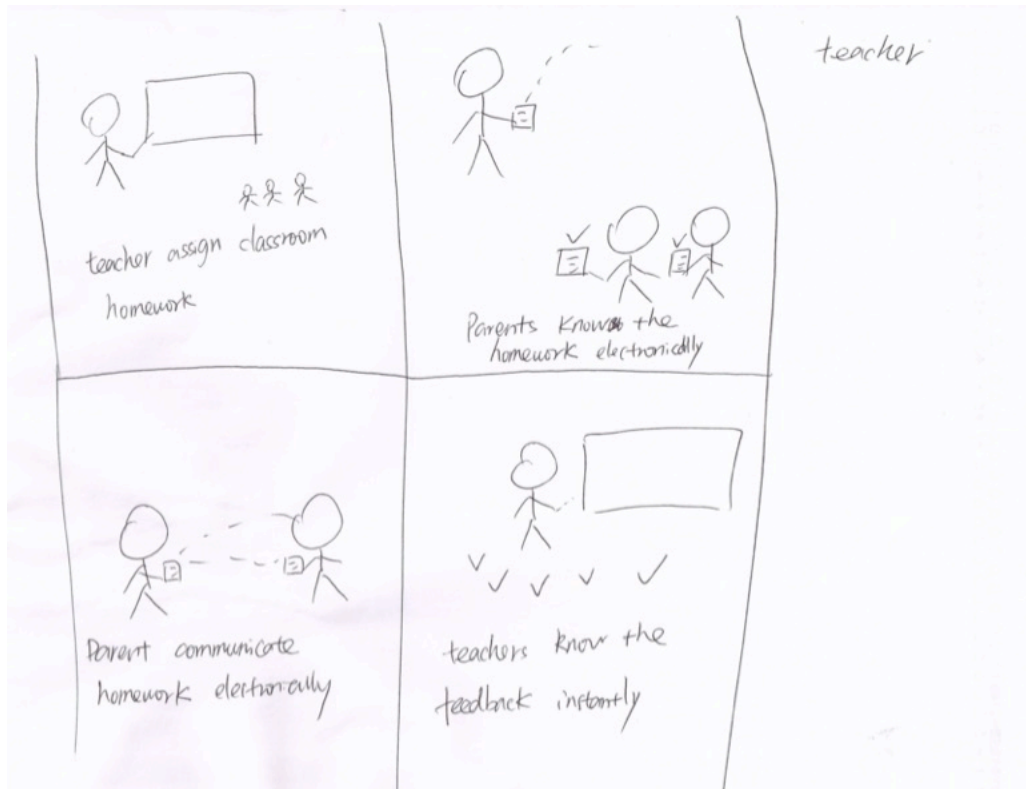
Parent wake up late and unable to fill the work shift she selected. She can use the new system to send emergency message to all parents and teacher. Therefore the parents can see the emergency and some person fill her work shift that day.

Fortunately the classroom remain normal!



Storyboard 2 (ideally)

Teacher needs to send homework and attentions to parents. She pull out the system and all the parents get the notification. Parent can discuss the assignment open and instantly. The teacher can get feedback from parents immediately too.



Storyboard 3 (ideally)

Teacher can view and see the tuition submission status clearly. Teacher can send notification to parent who has tuition overdue. Teacher can cooperative with professional software to manage school financial.

