Art City Music Academy App

Project Artifact, Rationale, & Documentation

Client Background

Art City Music Academy has a rich history of providing music education to children of all ages and abilities. No one does what they do. People around the country seek out their program. It is rare to find a studio that offers so many performance opportunities, a technique program, a theory lab, and a community of committed students and parents. Parents who catch the vision of what the Academy is doing, whose students embrace either the group or the individual program with full participation, stay for years to come.

Art City Music Academy has grown to three locations with hundreds of students and teachers. The owner has a goal of having 1000 students participating in the Academy.

Problem Statement

Art City Music Academy (hereafter referred to as ACMA or the Academy) needs a more effective way to connect with the parents of their music students. Parents are heavily involved in their students' learning at ACMA, and having an app would provide an easily accessible means for communication with (and from) the Academy. Additionally, the app would serve as a source of support for parents helping their children at home in between lessons.

Goal

Our goal as a design team was to create the skeleton of an app that ACMA could then flesh out with content at a later time with a professional developer. We focused on breadth rather than depth, with parents being our targeted audience, and created an app that could easily be adapted to a "lite" version that the Academy could sell to others. This "lite" version would have the features of the ACMA app without ACMA's copyrighted content.

Process

Initial meeting with Owner

In our initial meeting with the owner, we learned about her vision for Art City Music Academy. We discussed her business goals which include teaching 1,000 students, giving students quality, well-rounded music education for a good value, and providing increased support through a variety of resources. She would improve Art City Music Academy by hiring more consistent teachers, improving their marketing and recruiting, and continually editing their materials. We discussed her most valuable customers: the parents who return with multiple children over several years. These parents tell their friends and recruit on behalf of the Academy.

The owner mentioned that communication has been a concern. Parents often feel they are missing vital information (such as recital times and semester schedules) and lack contact with the teachers. The Academy provides a printed calendar to each student in their supplemental binder at the beginning of each semester. Teachers send out emails, and the Academy sends automated phone calls. Some teachers use Marco Polo to send and receive videos to and from students' parents. Our meeting with the owner helped us determine that we wanted to focus on helping her support her students and parents by making materials and resources available while increasing communication--all within one app.

User Testing: Surveys, A Day In the Life (Aprel and Julie)

Our first round of user testing was conducted by Aprel and Julie. Aprel designed a survey to be completed by parents inside and outside of the Academy (see Artifacts). Aprel focused on parents with students currently enrolled at the Academy. We felt this was a vital place to begin since these parents are our target users. Julie surveyed parents outside of the Academy. This gave us a general sense of what parents of music students would find useful in the realm of support and communication with their child's music teacher. It also gave us evidence that a “lite” version of the app could be a marketable option for ACMA, should they choose to make it available.

Aprel also conducted *A Day in the Life* study. Parents were given an opportunity to craft a story of how an app could be used to support their child's music education. Aprel’s purpose was to extract tacit knowledge of how the app would be used. Luck (2003) explained the importance of this: “Narrative and metaphors [are] considered positive language…to elicit tacit knowledge and to allow the designer to gain insight into the mindset of the user.” The choice of *A Day in the Life* method was “for the researcher to understand the routine and typical activities of a user that the user performs by mere habit and that the user would perform subconsciously” (Think Design Collaborative, 2018). The *Day in the Life* method also elicited storytelling which is “a process of discovery for the teller. Stories have been seen as important modes for storing knowledge and assigning meaning to our experiences'' (Parish, 2006). During this phase of user testing, participants used storytelling to discover possible uses for the app and assign meaning.

As a team we were able to take the results of this round of user testing and make important choices about our information architecture. We selected the most important features of the app according to our results:

- Parents wanted to be able to have more effective communication from the studio itself.
- Parents wanted to see a place for their students to practice their note reading, which would be a digital version of flash cards. Since this was the most important feature to parents we wanted to make sure it was easy to access.
- Parents wanted practice aids. Many parents come to the studio with varying levels of musical knowledge. They wanted to have access to theory aids, tutorial videos, and practice aids.
- Parents wanted access to audio files. The Academy includes a CD with each semester long lesson book. A digital copy would eliminate the need for a CD.
- Parents wanted to be able to log and track practice minutes.

Information Architecture

Using this information, our team diverged and each built an information architecture (see Artifacts). We all found that this was most easily accomplished by hand drawing. We reviewed each drawing and converged on one information architecture.

We found over the course of our design that while the IA provided a nice beginning structure, our app didn't follow it. The development of the app evolved over the course of the project. We didn't go back and update our IA which would have been helpful since we continued to add more screens than we had initially planned. We kept some basic ideas from our IA, but as we completed more user testing we increased the functionality of the app which eliminated the need for certain portions of our IA.

Although we didn't follow our initial information architecture, we were able to see where we needed to focus most of our efforts (the parent interface). There is great potential for more design efforts on the student interface of the app, but our time restraints did not allow us to spend a lot of time on that portion of the app. We came up with a lot of ideas in our initial discussions about what the student interface could look like, and it would have been fun to do user testing on those ideas, but the obvious priority, based on survey results and our discussion with the owner, was the parent interface.

Software: What Worked and Why We Used What We Did

Google Suite

We used Google documents located in a shared Google folder to collect and organize our design documents. We all contributed to our design journal. We shared the results of our user testing, pre and post client meeting plans, videos, and the schedule of our iteration cycle. We used Google Hangouts for our meetings.

Cacoo

To develop our app, we used Cacoo. We chose this software because it enabled collaborative work. Cacoo allowed each of us to have access to the design at the same time. We found that this was essential when we had our Google Hangout meetings. We would all open our design in Cacco and work simultaneously. This allowed us to make decisions together. Cacoo also allowed us to access the design individually and work according to our schedule. This was important to our team because we all have very different schedules.

In addition, Cacoo offers a number of icons and tools which enhanced our design. For example, one of their tools allowed us to add links to our design. This particular tool was valuable in later user testings--our users could experience the functionality of the app--and it made it easy to demonstrate the app for our pitch.

Wireframing

We had some initial ideas for wireframing after our first round of user testing. We knew that we wanted a login page so that ACMA's copyrighted material could be protected, and we knew that once a parent logged in they needed access to their children's class info, communication features, and account and settings pages. We set up the login and home pages in Cacoo and added a quick link to the note reading practice on the homepage since that was something lots of the parents in Aprel's initial survey had asked for. We developed the rest of the wireframe through discussion and user testing results as the design process continued.

Personas

We wrote out a few personas on different types of users (a mom with no musical background, a mom with several kids in the Academy, a dad with kids in the Academy) to help us see some other perspectives while making design decisions (see Artifacts). We did not end up using these personas directly for anything, but it was a good exercise for us to consider the different types of users and what they would need.

User Testing: Card Sort (Heidee)

For the second round of testing, Heidee did a card sort to find out how parents wanted the music content features organized. There are communication, calendar, and payment features in other sections of the app, but Heidee's testing focused on music content features such as weekly lesson sheets and theory exercises. We figured parents would not want a long list of all the features on their student page, but each team member had slightly different ways of initially organizing the features into categories. We decided to let some users organize the features the way they wanted.

Heidee chose to use the User Interface Toolkit, mentioned in the "Participatory Design: Bringing Users Into Your UX Process" video. The video explains that the user interface toolkit "[enables] people to build

their own ideal solutions through low- to medium-fidelity prototypes," (UXPin, 2018). Paper versions of feature buttons on a paper phone template would allow the parents/users to rearrange and reconfigure the features into different categories and places on the screen to discover what would make sense to them. We would use the data collected "not to create final solutions, but to understand people's priorities," (UXPin, 2018). What did they want to see first, what did they want easy access to, etc. Because our features could easily be sorted in categories, this was also a form of card sort.

Heidee didn't know if users would sort things into categories or if they would just arrange them on the screen, but she assumed they would arrange things into categories and folders. This would help us understand their mental models when using the app.

Initially, the plan was to do an open card sort, one where the users would sort icons on the home screen and on the screen that comes up when they click on the child's name., However, doing both of those would take too long and would possibly be too much testing at one time to get good data, so we decided to focus on only the student page with all the music content features.

We were planning on allowing users to write on blank feature or category cards if they had a great idea, but with so many features that we already knew that parents wanted, we decided to allow them to create just their own categories but not their own features. Based on Donna Spencer's book on card sorting, this open format would allow us to "get information about the groups people create as well as the cards that go into the groups," (Spencer, 2009). We would learn how parents group different features and what names they would give the categories.

Because Heidee is new to the area, she has no acquaintances or friends with children in music lessons. So she turned to her network where she grew up. Even though the testing would have to be on the computer and over the phone, our team decided that was better than waiting any longer for data. Spencer mentions that "one way to combine the rich insight available from a face-to-face activity and the convenience of software-based sorting is to use screen-sharing software and a phone hookup. You can watch the participant work and talk to that person about what he or she is thinking" (2009) This is exactly what Heidee did.

We learned a lot from this user testing. All three parents created at least one category, which meant that all 12 features weren't simply listed on the child screen. They created different categories, and one user had a few features that she wanted right on the first screen without having to click through another category. Included in the Artifact section are screenshots of their work with short summaries of what Heidee learned and/or quotes from their thinking aloud.

After looking at the three tests individually, we looked at each feature to see if there were similarities in where the parents placed them so we could decide where they should go in the app. Here are the categories in which each feature was placed, listed by user.

Feature	**Category**		
	Shane	***Kary***	***Tristan***
Weekly lesson sheet	Student page	Student page	Student page

Sheet music	At home	Weekly lesson	Study/Practice helps
Notes	At academy/In class	Student page	Weekly lesson
Pass-offs	In class/Score	Student page	Weekly lesson
Recordings	At home	Theory/Weekly lesson	Resources
Theory aids	At home	Theory	Study/Practice helps
Theory exercises	At home	Theory	Study/Practice helps
Practice log	Score/At home	Student page	Weekly lesson
Theory lab log	At academy	Theory	Resources
Note reading practice	Score/At home	Theory	Study/practice helps
Class book	Materials	Weekly Lesson	Resources

There were several similarities we saw in this comparison:

- All three parents wanted the weekly lesson sheet to be the first thing they saw on the screen.
- The 'at home' and 'study/practice helps' categories had almost all the same features, so even though they were named differently they were essentially the same.
- The 'materials' and 'resources' categories seemed similar as well.
- All three users wanted easy access to note taking in their child's weekly lesson.
- All three users placed pass offs in a main, weekly page, despite those having different names.
- The parents wanted the class book as a reference. They wouldn't necessarily use it all the time, but they still wanted access to it, so we put that feature in the resources category.

The other features (Sheet music, Recordings, Theory Aids, Theory Exercises, Practice Log, Theory Lab Log, and Note Reading Practice) did not achieve a consensus in our testing.

- Shane and Tristan placed Sheet Music, Theory Aids, Theory Exercises, and Note Reading Practice in the same categories (things they would use at home), but they didn't agree on the others.
- Although Kary had a completely different way of organizing the features, we really liked her idea of having a Theory category, and, since the features she placed in it had "theory" in the name, we thought that parents would still be able to find those features easily.
- We kept the Resources page, which contained things the users placed in Materials and Resources.
- Instead of trying to decide which features go in the weekly page and which ones go in a practice page, which could contain a lot of overlap, we decided to put the rest of the features in a Weekly Lesson category. That way they were in one place and the parents did not have to go to different categories to find what they wanted.
- Besides the Theory, Resources, and Weekly Lesson categories, we added the Score button that Shane made, changed the name to Progress, and made it a category containing the four features

that log and display student progress: Practice Log, Theory Lab Log, Note Reading Game, and Pass Offs.

Overall, even though it was not a perfect user test, we learned a lot from the user's ideas and insight and felt confident implementing those ideas into our design and refining them through our next few rounds of testing.

Creating the Prototype

After the second round of user testing, Heidee made a prototype of the app that included everything the three users from the second round of testing had wanted. From there, we went through each page and talked about what we should keep and what should go. Our first iteration of the app had a top navigation bar with a drop-down menu, but we realized we wanted that space for back buttons on other pages, so we decided to do a bottom menu instead with icons for the different pages that would appear on every screen.

User Testing: Think Aloud (Brinn)

Although Brinn had originally planned on doing an A/B test, we agreed that given Heidee's testing, and the wireframes and simple prototype created as a result, the most useful information would likely be achieved by putting what we had in front of people and doing a *Think Aloud*.

Brinn found that every single user not only gave feedback on and through the questions and tasks, but also an abundance of other feedback on things that hadn't been asked. Each test followed the same format, with the same tasks, but resulted in unique side conversations and feedback.

The way "Communication" was navigated came up as an issue in all of my tests, so we chose to spend time iterating ideas collaboratively as a team on Cacoo, and ended up removing the "Communication" button from the homepage altogether, having it accessible instead from the message and calendar buttons on bottom menu bar.

"Communication" had been chosen by the parents of ACMA as well as the owner as a priority for the app, which is why it had been placed on the homepage. But user testing helped us see that by trying to have it so discoverable, we had actually made it more confusing.

User Testing: Looking at Competitors and Interviews (Julie)

Why we chose to do this kind of user testing

In Chapter 9 of *Don't Make Me Think,* Krug (2014) recommends testing competitive sites, or at least testing "sites that have the same style, organization, or features that you plan on using" (p. 124). Although there are no competitor apps out there anything like what we were designing, we decided it would be valuable to look at apps that teachers use to communicate with parents. Communication was

high on the priority list for our end users and for our client, so it made sense to look at those types of apps and find out not only what people like or dislike about them, but also how they use them.

What we learned and how it influenced our design

To get an idea of what kinds of apps teachers use, Julie conducted an informal survey on Facebook. She asked her followers:

“Those of you who are teachers, what apps do you use to communicate with parents? Which ones are your favorites?
Those of you who are parents of students in elementary or secondary schools, what apps are your favorites for communicating with your children's teachers?”

After evaluating the responses she got, Julie asked several parents at a Thanksgiving gathering what kind of communication tools their children’s teachers use in the classroom. Most of them said that teachers used email, primarily. She then showed them what Remind looks like, since it was mentioned most in the Facebook responses. The parents got excited about the features in Remind and expressed interest in having their children’s teachers use it (or something like it) in the classroom.

Our conclusion from Julie’s test results was that the ACMA app would benefit from a messaging function as well as email capabilities. Julie set up an idea for the communication section, patterned after the features in Remind, that included messages for the studio in general (Posts), individual messages between parent and instructor (Messages), and Alerts for things like tuition deadlines and new content. These would be nice features for the app when it’s developed.

Alternative Partial Solution

In the meantime, however, if communication is ACMA’s biggest immediate concern, Remind might be a good option. There are a lot of good features that could help resolve some of the owner’s current issues.

Conclusion

When beginning this project, we all assumed (based on the description provided) that we would be helping design a note reading app. Our initial, pre-client meeting research involved note reading methods--particularly the landmark note approach similar to that used at the Academy. However, when we met with the owner, it became clear that the most pressing and high priority problems instead were growth, access to resources, and lifetime of customers, which she felt was and could be impacted by the support families receive in terms of communication and assistance at home. We were responsive to this, and changed our direction and focus, which was then guided and further refined by the series of user testing. We all came out of it with a deeper understanding of both the hows and whys of user testing, and we are excited to share with the owner something that we know will be helpful to her in achieving her vision for ACMA.

References

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Artifacts

Link to Clickable Prototype

https://cacoo.com/diagrams/slfQLRKOQKrPGDs1/4E998

User Testing Documents

User Test: Survey to determine priorities of app features

Survey for determining priorities of app offerings

Survey results from ACMA Parents:

Question #2

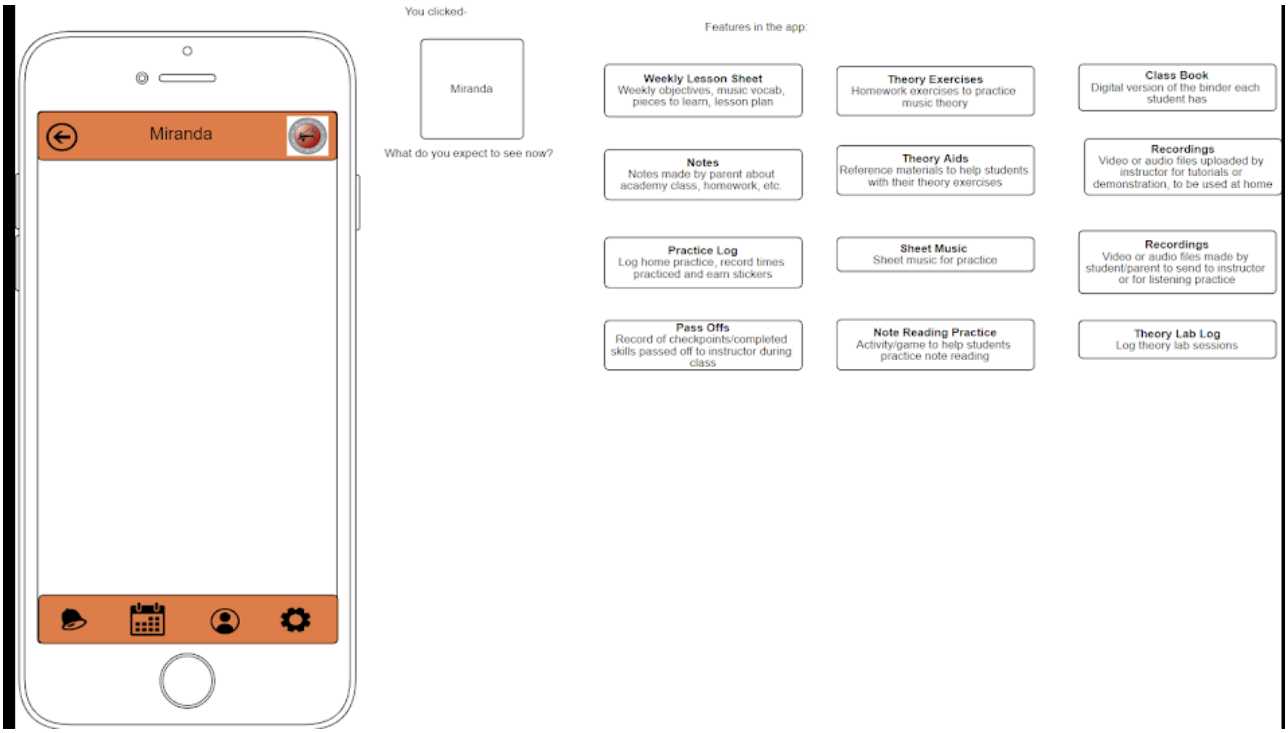
Rank	Feature	1	2	3	4	5	Total
2	Announcements from studio	20	8	3	0	1	32
	Announcements from teachers	0	0	3	0	0	3
1	Note reading practice	15	16	3	0	1	35
5	Log practice minutes	10	4	3	6	0	23
	Track song pass-offs	5	4	3	2	0	14
	Send and receive video or audio rec.	0	0	12	0	2	14
3	Practice aids	15	8	6	0	2	31
	Weekly lesson sheet	5	0	0	2	2	9
	Theory aids	0	0	9	8	1	18
	Class book	0	4	3	4	1	12
4	Audio files	15	8	0	6	1	30
	Supplemental sheet music	0	4	3	0	0	7
	Studio policy	0	0	0	0	0	0
	Student rewards	0	0	0	0	0	0
	Refer a friend	0	0	0	0	0	0
	Send and receive notes	0	0	0	4	0	4
	Payment portal	5	0	3	2	3	13
	Upcoming performances & festivals	0	4	0	2	2	8

Survey results from non-ACMA parents:

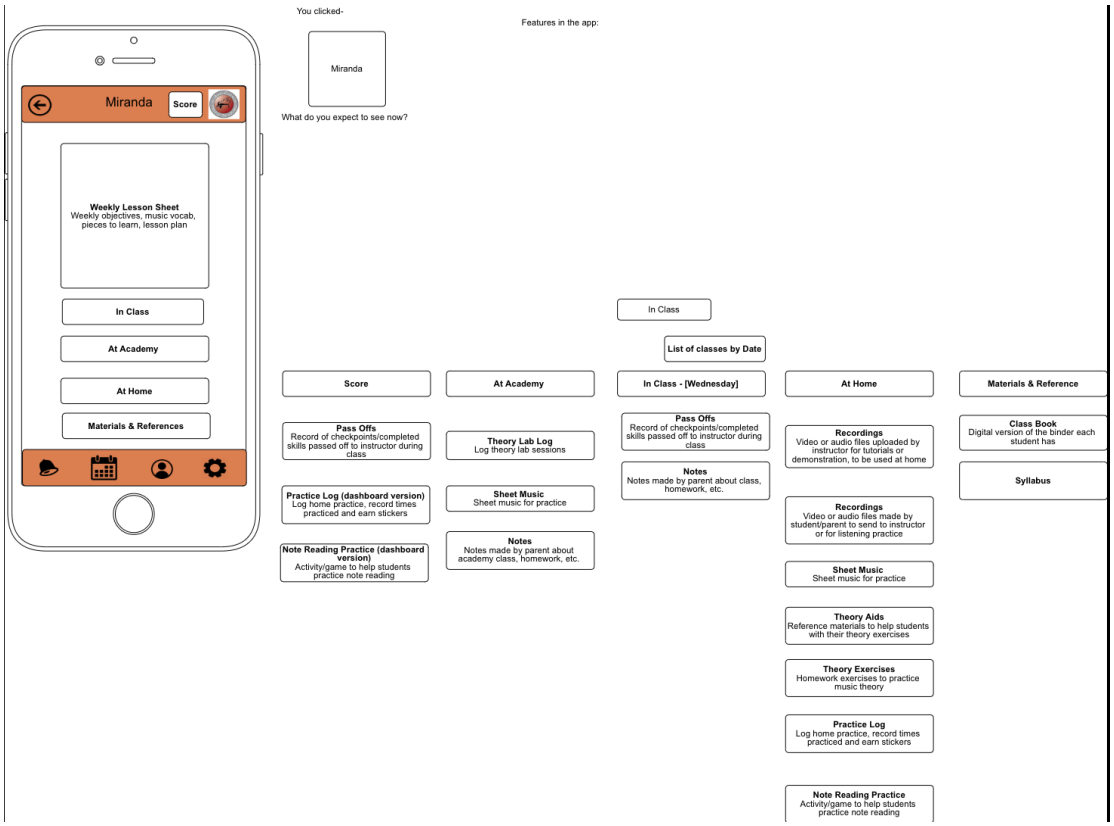
Question #2

Rank	Feature	1	2	3	4	5	Total
1	Announcements from teacher	5	16	3			24
3	Note reading practice	5	4	6			15
	Track song pass-offs	5		3			8
3	Practice aids	5		3	6	1	15
3	Theory aids	10		3	2		15
	Audio files		8			1	9
	Studio policy					2	2
	Refer a friend						0
	Upcoming performances & festivals		4			1	5
2	Send and receive video or audio rec.	5	4		6	2	17
	Log practice minutes		4	6			10
	Send and receive notes	5					5
5	Weekly lesson sheet	5	4		2		11
	Music books						0
	Supplemental sheet music					1	1
	Student rewards					1	1
4	Payment portal	5	4	3	2		14

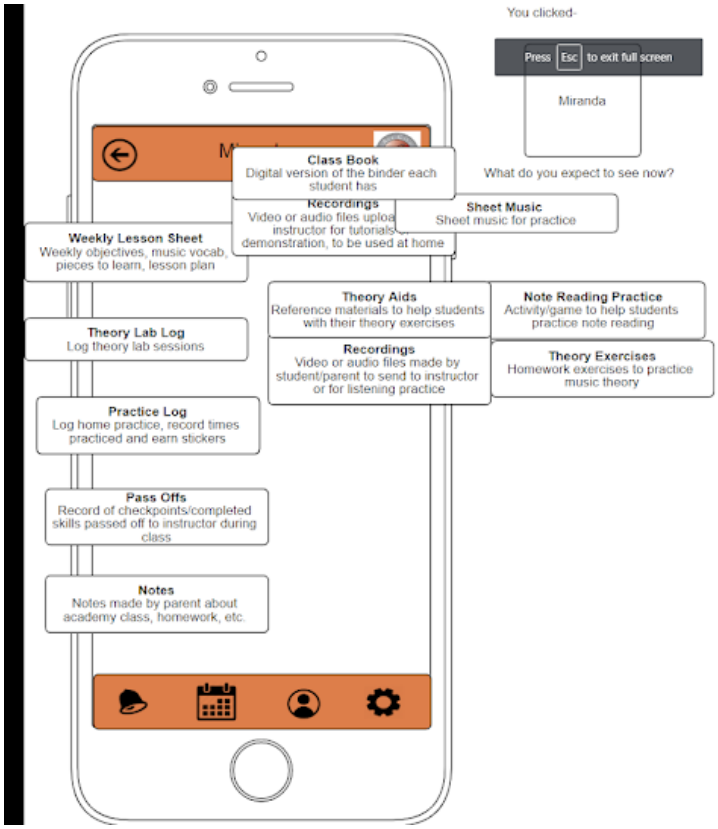
User Test: Card Sort


You clicked-
Miranda
What do you expect to see now?
Features in the app:
Miranda
Weekly Lesson Sheet
Weekly objectives, music vocab, pieces to learn, lesson plan
Theory Exercises
Homework exercises to practice music theory
Class Book
Digital version of the binder each student has
Notes
Notes made by parent about academy class, homework, etc.
Theory Aids
Reference materials to help students with their theory exercises
Recordings
Video or audio files uploaded by instructor for tutorials or demonstration, to be used at home
Practice Log
Log home practice, record times practiced and earn stickers
Sheet Music
Sheet music for practice
Recordings
Video or audio files made by student/parent to send to instructor or for listening practice
Pass Offs
Record of checkpoints/completed skills passed off to instructor during class
Note Reading Practice
Activity/game to help students practice note reading
Theory Lab Log
Log theory lab sessions

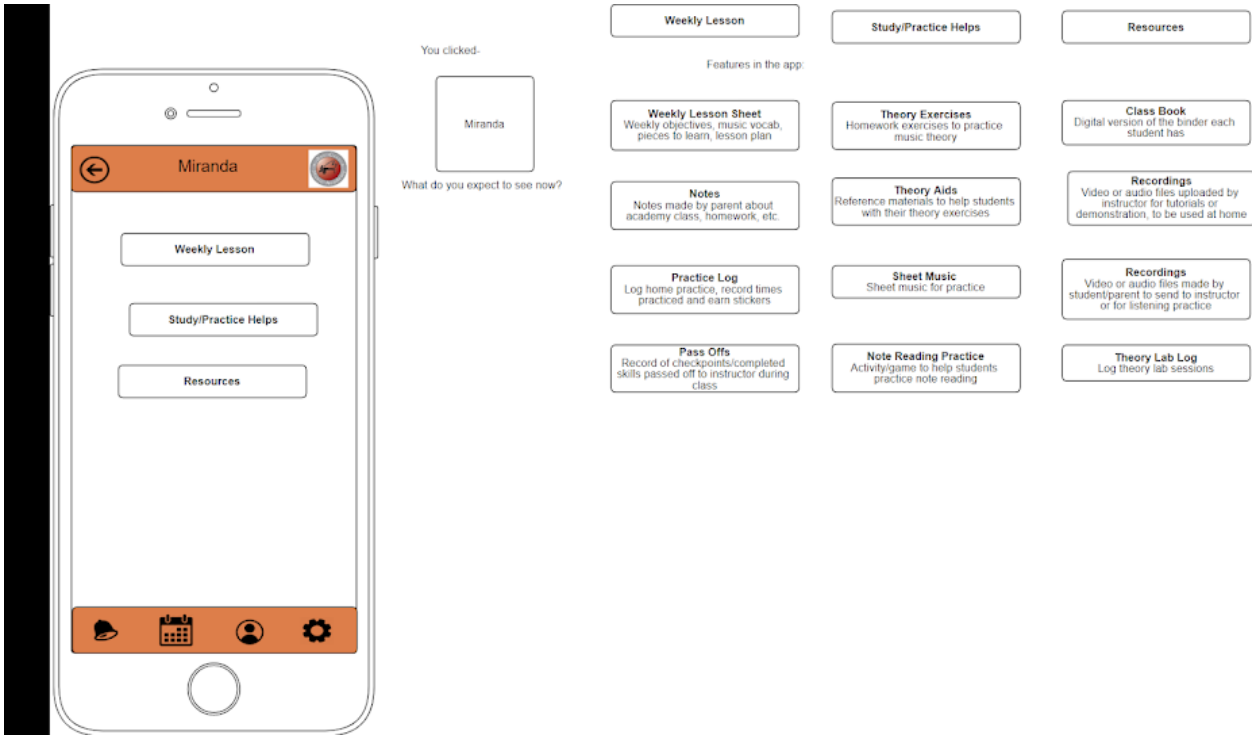
User #1- Shane


You clicked-
Miranda
What do you expect to see now?
Features in the app:
Miranda
Score
Weekly Lesson Sheet
Weekly objectives, music vocab, pieces to learn, lesson plan
In Class
At Academy
At Home
Materials & References
In Class
List of classes by Date
Score
At Academy
In Class - [Wednesday]
At Home
Materials & Reference
Pass Offs
Record of checkpoints/completed skills passed off to instructor during class
Theory Lab Log
Log theory lab sessions
Pass Offs
Record of checkpoints/completed skills passed off to instructor during class
Recordings
Video or audio files uploaded by instructor for tutorials or demonstration, to be used at home
Class Book
Digital version of the binder each student has
Practice Log (dashboard version)
Log home practice, record times practiced and earn stickers
Sheet Music
Sheet music for practice
Notes
Notes made by parent about class, homework, etc.
Recordings
Video or audio files made by student/parent to send to instructor or for listening practice
Syllabus
Note Reading Practice (dashboard version)
Activity/game to help students practice note reading
Notes
Notes made by parent about academy class, homework, etc.
Sheet Music
Sheet music for practice
Theory Aids
Reference materials to help students with their theory exercises
Theory Exercises
Homework exercises to practice music theory
Practice Log
Log home practice, record times practiced and earn stickers
Note Reading Practice
Activity/game to help students practice note reading

User #2- Kary



User #3-Tristan



Personas

Persona Template

Project: ACMA

Date:

Name: Julienne

Details: 35 yrs old; married with 5children; works Part-time for a small business; moderate musical abitity; took lessons and can play basic songs for church; has 3 children a students w/ACMA; Child 1, 14 yrs old, in private lessons; child 2, 9 yrs old, in young artists; child 3, 6yrs old, in Mighty Musicans. Very happy w/ACMA; Refers friends on a regular basis

Goals:

- Have piano proficient children
- wants one method to communicate with multiple teachers
- wants to be able to track all of the minutes her children in one place
- wants a calendar that she can download & modify on her calndar app.
- overall she wants one app to track herchildrens progress & make contact.

Jonathan

Has 4 kids who are very involved. Wife works part time, music lessons happen to fall during her work time, so Dad takes 8 year old daughter to music class. Works full time as an accountant. Loves spending time with his kids, tries to have his life organized so that he can leave work at work and focus on his wife and kids when he gets home. Very clear plans for his life, doesn't like when things get in the way of that. Loves baseball and being active, played guitar when he was younger but hasn't found time to play in a long time. He is pretty familiar with chords and rhythm, but didn't ever become fluent reading notes on a staff. Mostly self taught musician. Mom and Dad coordinate weekly who is driving who to activities and try to be at all their kids' events. Dad is really annoyed by last minute schedule changes, as it makes it difficult to get all the kiddos where they need to be. Dad is annoyed by unclear communication and unclear expectations.

Persona Template

Project: ACMA Music App Design

Date:

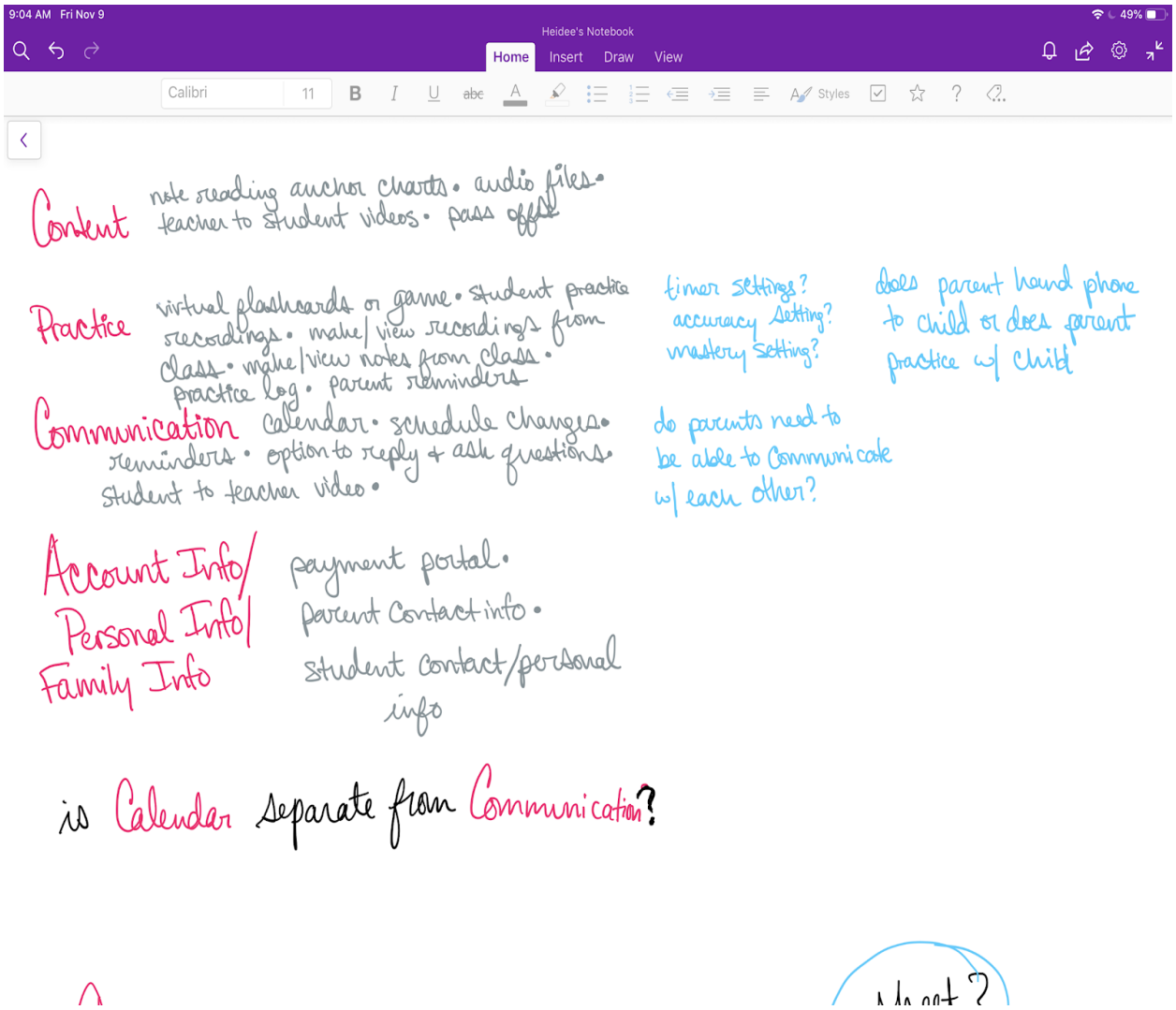
Name: Laura

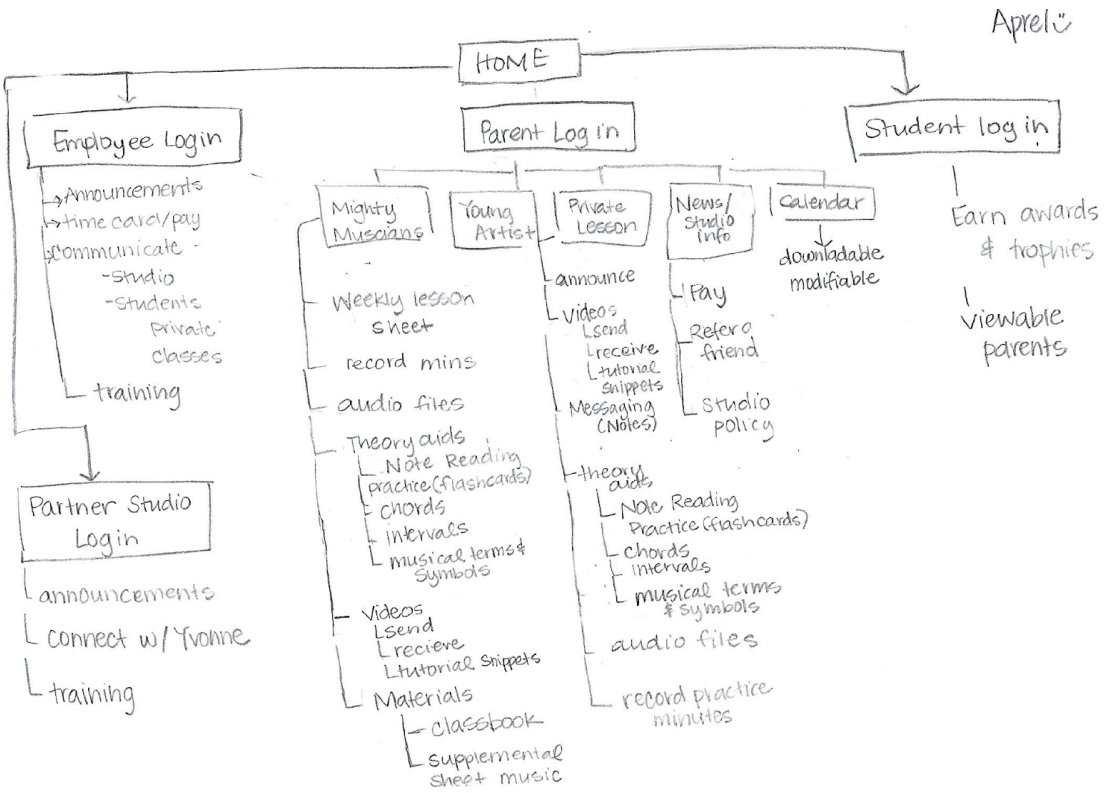
Details: Thirty-one years old mother of three children, two girls and a boy. Originally from Brazil. Laura never had any musical training, but she wants her children to learn to play the piano. She is busy and not interested in learning to play herself. She expects her children to take charge of their own practice time without asking her for help because she doesn't know how to read notes. Theory is a mystery to her. She brings her kids to lessons but would rather not participate in what they are learning—it's her "free time." She attends church weekly.

~~Goals~~:

Goals: Laura wants her kids to learn music because she feels it will help them be better students. And if they get really good, she gets to feel proud of them and hear others praise them. She wants her kids to be able to play hymns in church.

Initial Information Architecture

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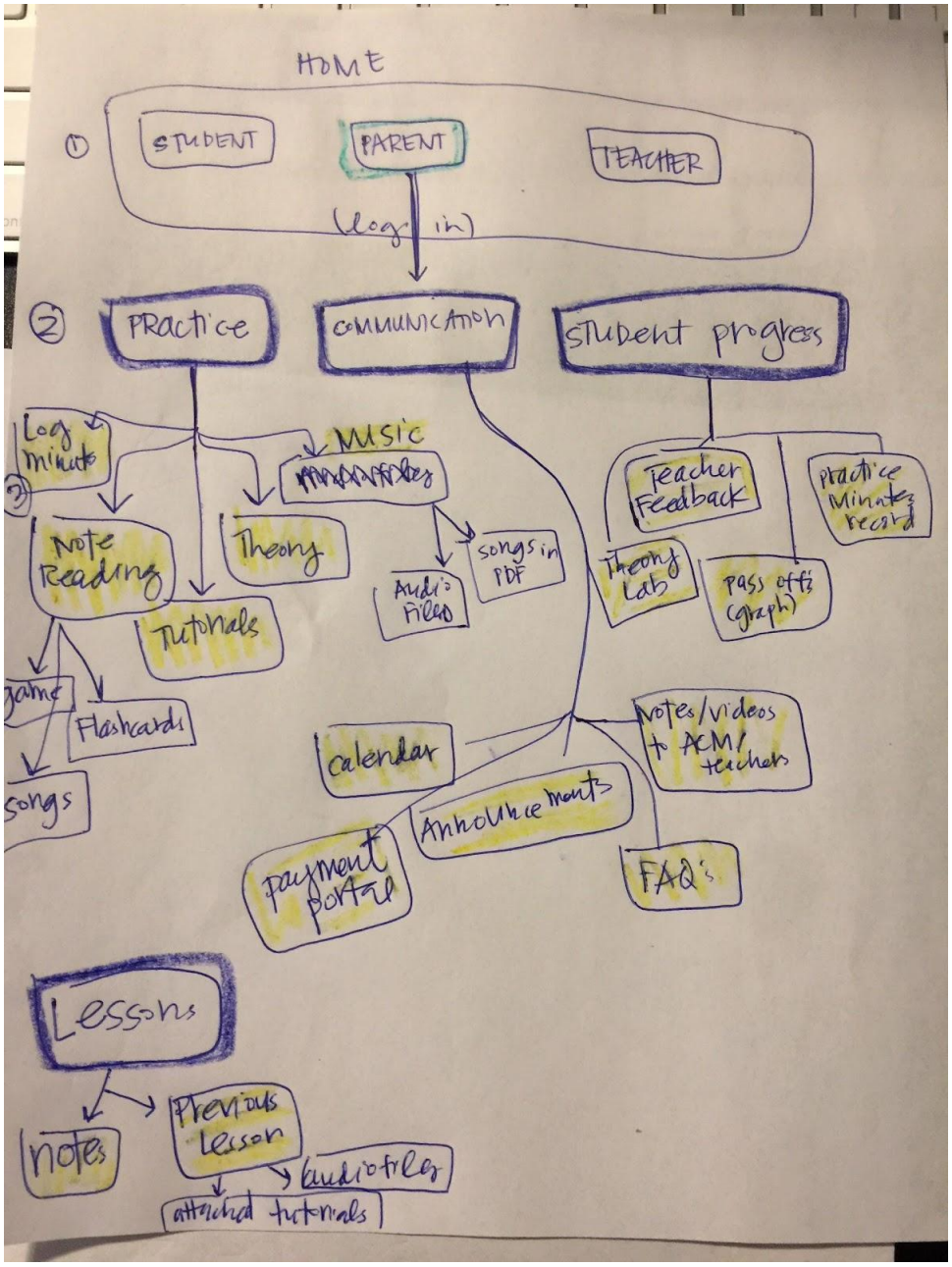
training
Parent Log in
Mighty Musicians
Young Artist
Private Lesson
News/ Studio info
Calendar
downloadable modifiable
Weekly lesson sheet
record mins
audio files
Theory aids
Note Reading
practice (flashcards)
chords
intervals
musical terms & symbols
Videos
Lsend
Lreciere
Ltutorial snippets
Materials
classbook
supplemental sheet music
announce
Videos
Lsend
Lreceive
Ltutorial snippets
Messaging (Notes)
theory aids
Note Reading
Practice (flashcards)
chords
intervals
musical terms & symbols
audio files
record practice minutes
Pay
Refer a friend
Studio policy
Student log in
Earn awards & trophies
viewable parents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STUDENT
PARENT
TEACHER
(log in)
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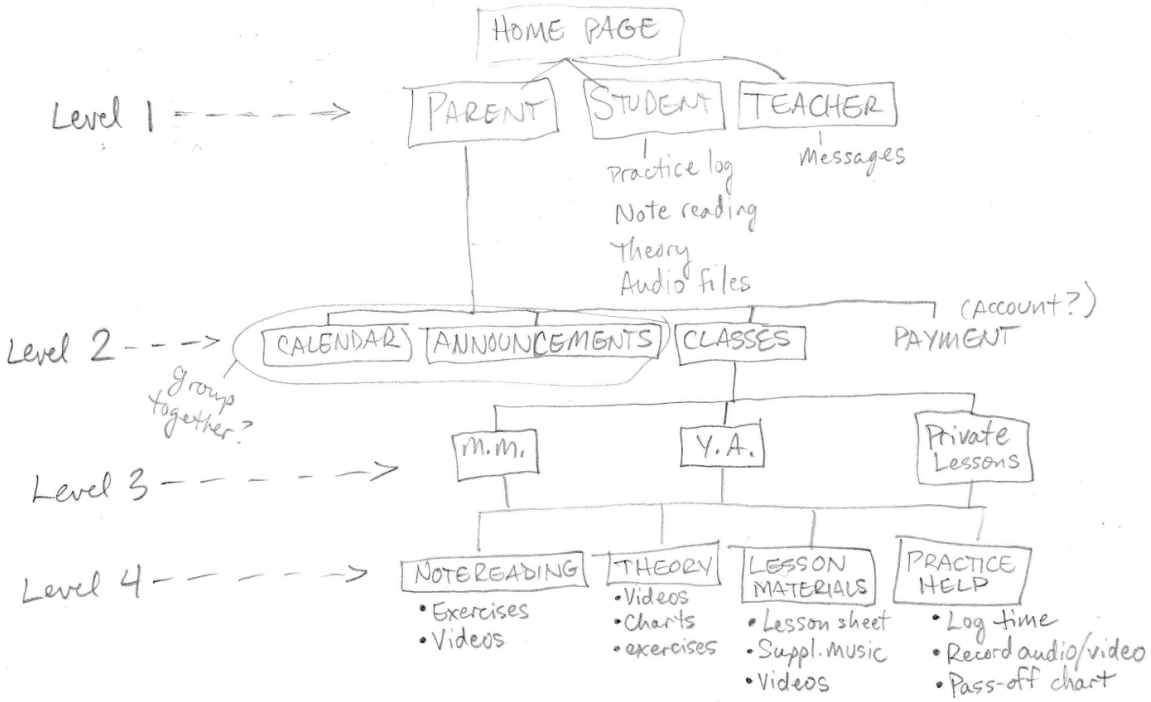
Practice
communication
student progress
Log minute
MUSIC
Note Reading
Theory
Tutorials
Audio files
songs in PDF
Teacher Feedback
practice Minute record
Theory Lab
pass offs (graph)
Flashcards
songs
calendar
Announcements
payment portal
Notes/videos + ACM/ teachers
FAQ's
Lessons
notes
Previous lesson
Audio files
attached tutorials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Prototype with Final Information Architecture