



## Low-fi Prototyping & Pilot Usability Testing

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### Introduction

#### **Value Proposition**

Get fit with anyone, anywhere

#### **Mission Statement**

Make working out fun and motivating by feeling present with a community and receiving workout instruction from live experts.

#### **Problem/Solution Overview**

Lots of people find motivation and joy in working out with others and getting feedback from instructors. However, it can be difficult to find consistent work out classes and regular exercise partners that match your skill level if you are busy or travel regularly. MetaGym is a virtual space where people can hop into classes led by expert instructors and build community by working out with others anytime and anywhere.

### Sketches

#### **Overview Images**



Figure 1. Sketches for interacting with classmates in VR



Figure 2. Sketches for AR UI to demonstrate workout instructions

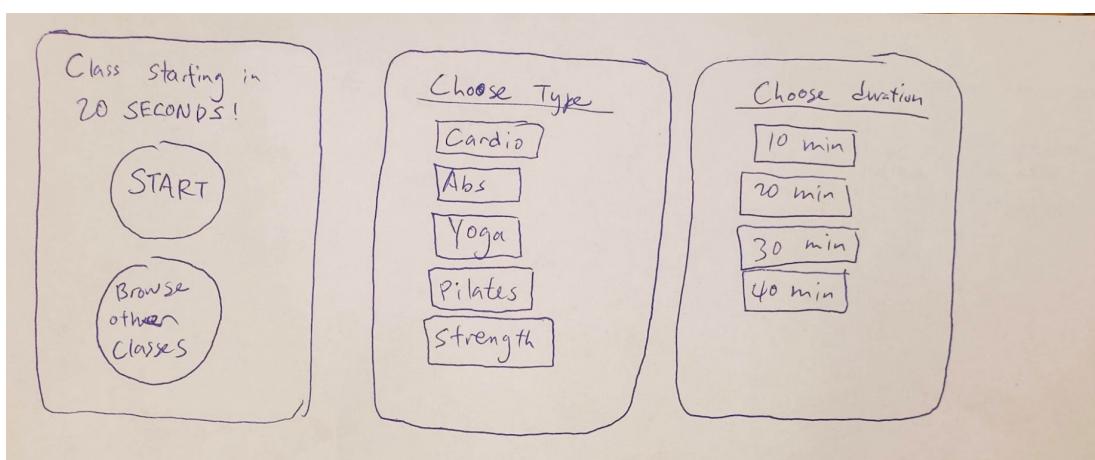


Figure 3. Sketches for mobile UI to browse workout classes

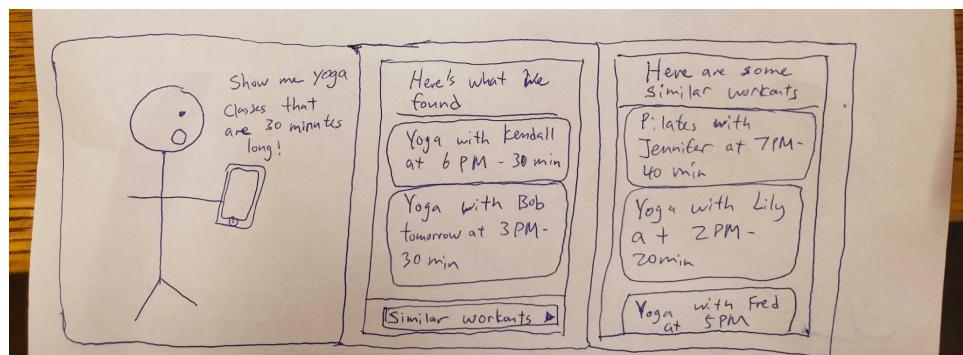


Figure 4. Sketches for voice command to find workout classes



Figure 5. Using text message to chat with classmates while receiving instruction from an instructor

### Top Two Designs

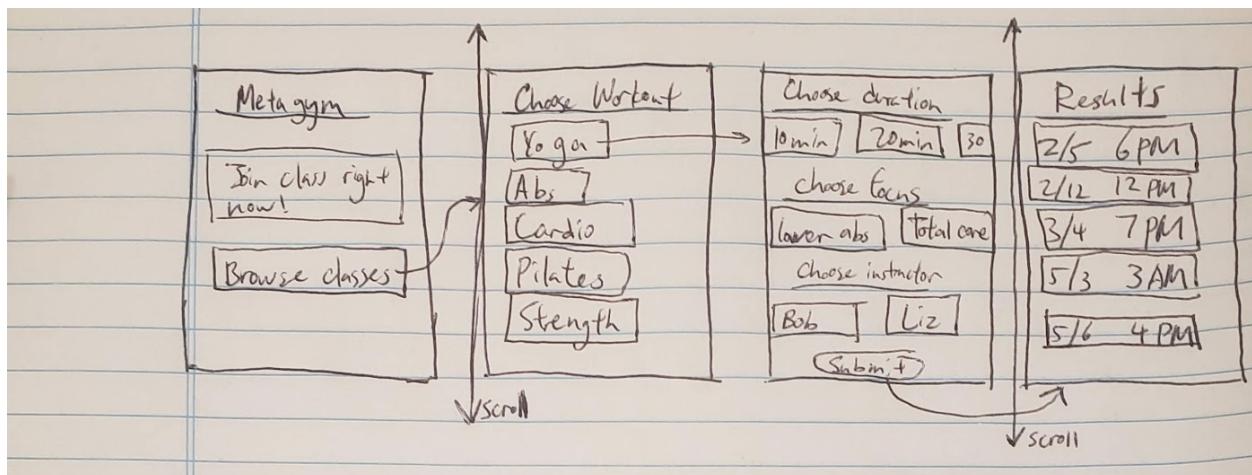


Figure 6. Mobile app to browse through different classes

Pros	Cons
<ul style="list-style-type: none"> <li>• Familiar way to search</li> <li>• Easy to display lots of detail</li> <li>• User doesn't have to memorize different filters</li> <li>• Can use phone notifications to send class reminders</li> </ul>	<ul style="list-style-type: none"> <li>• Will have to download mobile app separate from workout system</li> <li>• Might have irrelevant details/filters that the user will have to sort through</li> </ul>

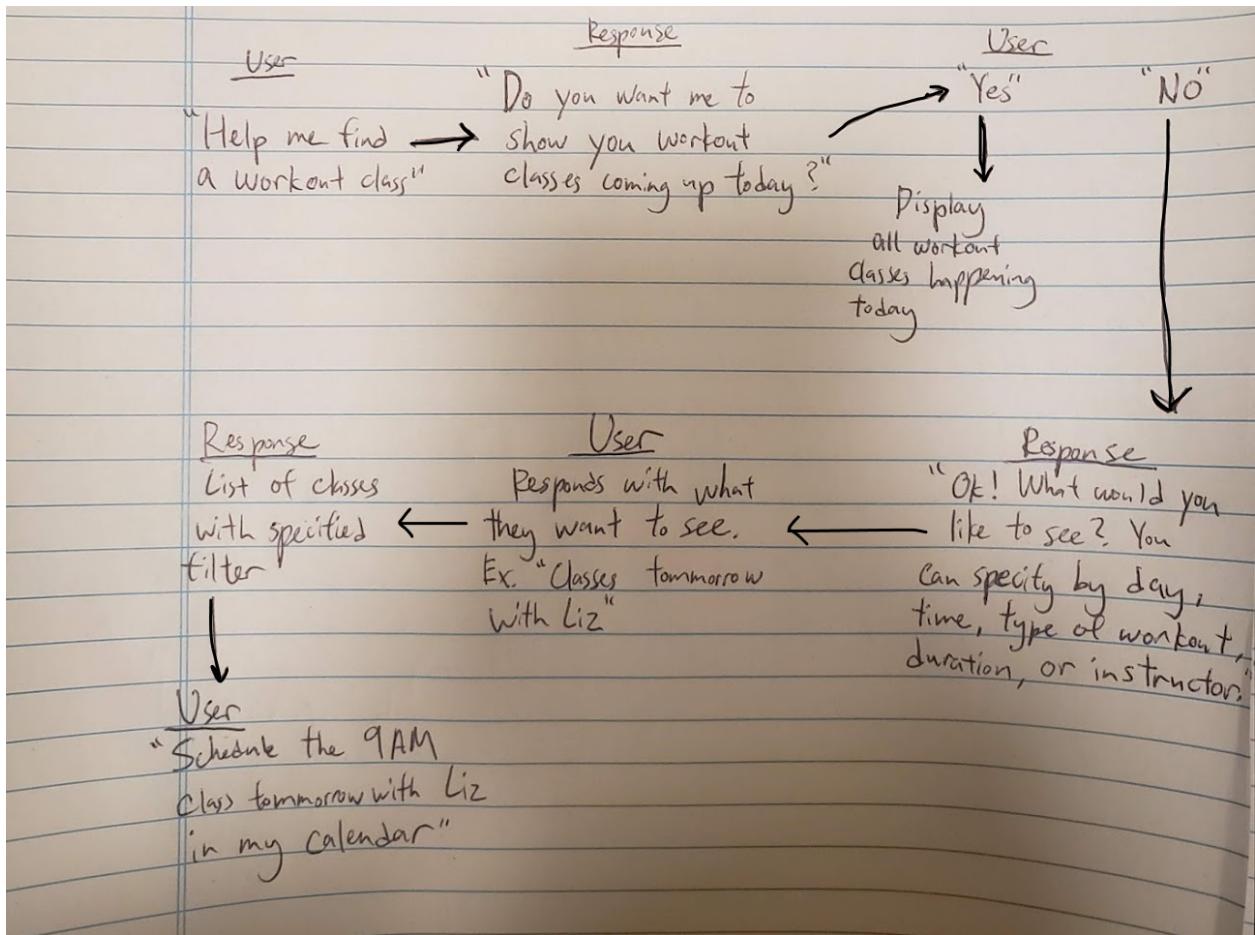


Figure 7. Voice commands to find and schedule workout classes

Pros	Cons
<ul style="list-style-type: none"> <li>• Hands free solution</li> <li>• Could be integrated directly into the workout system without separate device</li> <li>• Feel more personal</li> </ul>	<ul style="list-style-type: none"> <li>• Difficult for users to remember the details for different filters (ex. The names of instructors, types of workouts)</li> <li>• Might take a while for user to search with correct criteria</li> </ul>

## Selected Interface Design

### Rationale

We decided to go with the mobile app idea over the voice command idea. While asking a voice assistant to help users find classes could feel more personal, we felt that browsing through classes on a smartphone would be more intuitive and would allow users to find the classes they

are trying to find more quickly. We ultimately believed that the greater functionality on a mobile device trumps the extra personalization a voice-based system would have.

## Task Flows

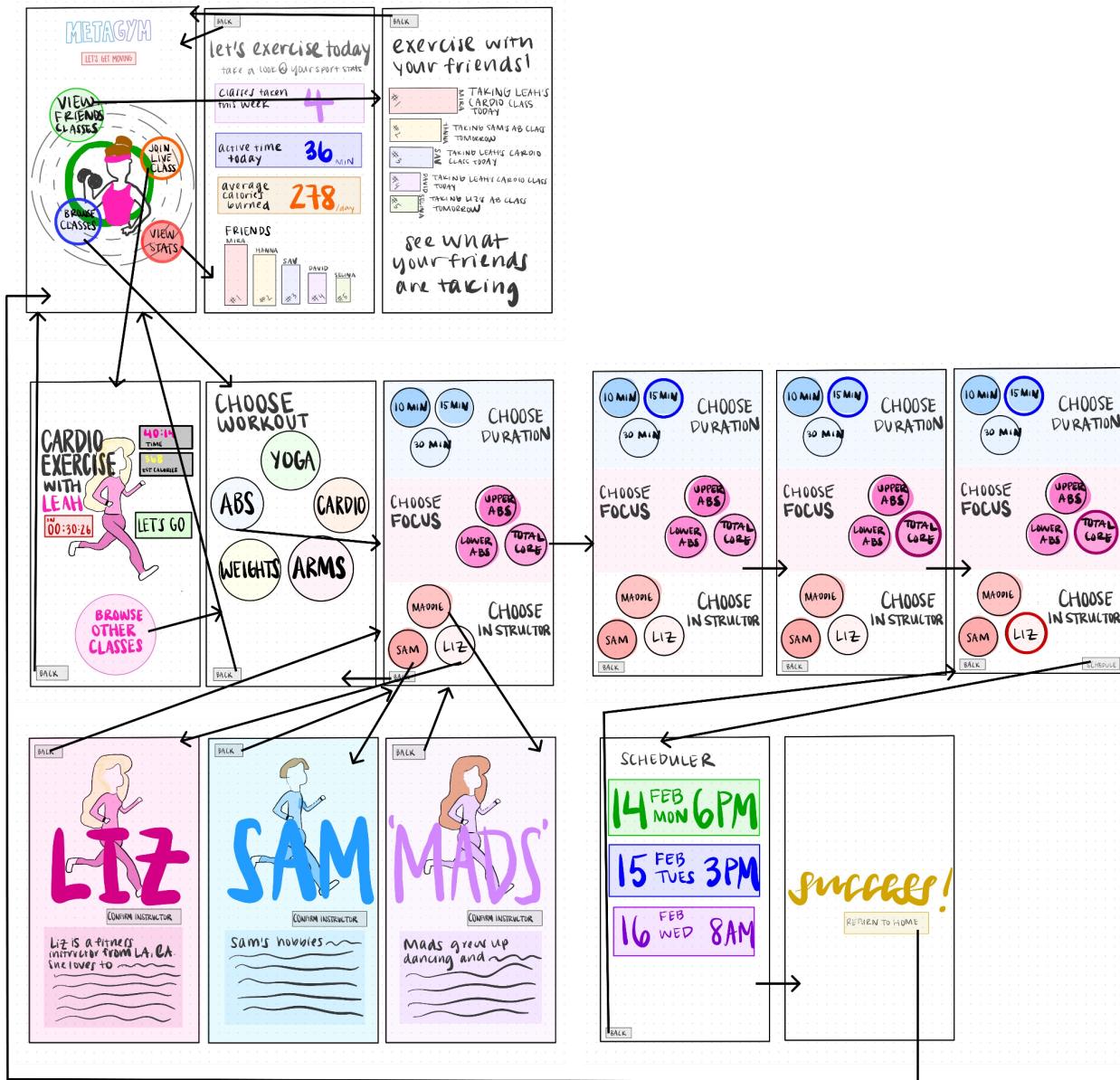


Figure 8. Complex Task: Browse and schedule workout classes

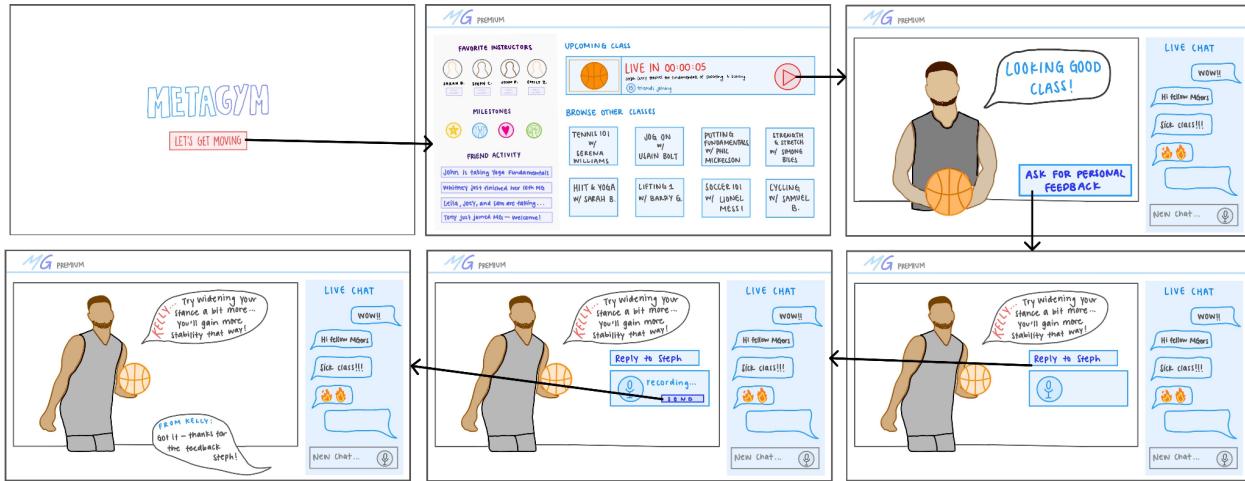


Figure 9. Simple Task: Receive Instruction

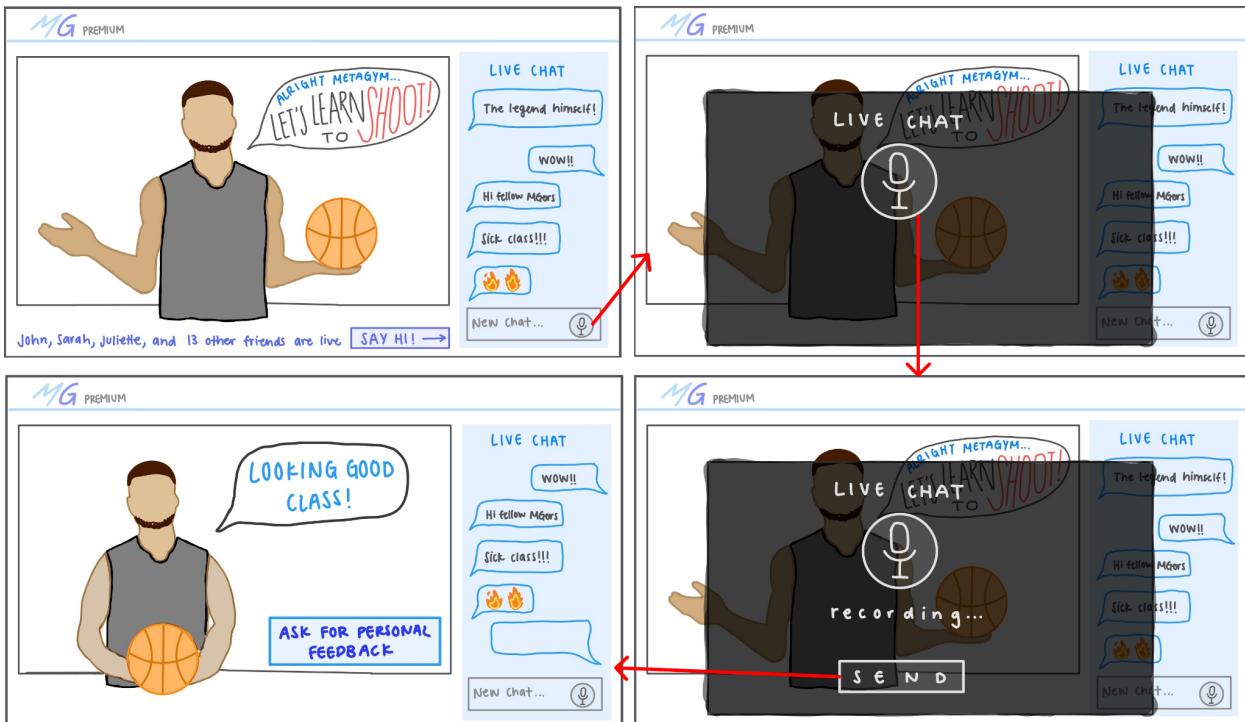


Figure 10. Moderate Task: Build Motivation and Community

## Prototype

We used Invision to wireframe a mobile prototype, and we used AdobeXD with a plugin called Adobe DraftXR to wireframe a VR prototype. The mobile prototype allowed testers to use touch input on their phone to click buttons and move through screens. The home page allowed testers to navigate to other screens for browsing classes, joining a live class, viewing their stats, and viewing their friends' classes. The VR prototype allowed testers to rotate their phones to view the screens in a 3D virtual environment and use touch input to click on buttons. The home page

allowed testers to navigate to a live workout class, and the class screen allowed testers to perform actions like send a message to their classmates and receive feedback from the instructor.



Figure 11. Mobile prototype screens



Figure 12. VR prototype screens

## **Testing Methodology**

### **Participants**

We interviewed:

- Anna, 21, student at Brown University (Loves Lululemon workout gear)
- Kaitlyn, 42, mother of two from Palo Alto (Attends SoulCycle classes)
- Akeile, 20, student at Binghamton University (Doesn't like working out)
- Willam, 30, from Nashville, Tennessee (Moderately works out)

We selected these participants because of their diverse experiences with working out as well as their ages. Aside from Kaitlyn, all participants were recruited through mutual friends. Kaitlyn was recruited after a SoulCycle class. While we could not show our appreciation through material compensation, we made sure to show it through words.

### **Environment**

We conducted our interviews through Zoom and FaceTime. After the greetings, participants interacted with our two prototypes while sharing their screen. We were able to not only see how they navigated through the prototype, but also their facial expressions as they did so.

### **Tasks**

1. Simple: Browse and schedule future workout classes.
2. Moderate: Receive instruction and ask and receive feedback from the instructor.
3. Complex: Foster a community by chatting with fellow classmates during the workout session.

### **Usability Goals**

1. Able to successfully schedule a future workout class.
2. Able to join an ongoing workout class.
3. Able to send a chat message to the live chat.
4. Able to ask for feedback and reply to the instructor.

### **Procedure**

1. Introductions; who we are, what our project is about etc.
2. Ask participants to sign consent forms.
3. Briefly give an overview of how the interview will proceed, of the Invision mobile prototype, and the Adobe XD VR prototype. Then send the link to both.
4. Ask participants to share their screen, and encourage them to speak throughout the test.
5. Have participants complete the three tasks.
6. Afterwards ask the participants overall what they liked and disliked about each prototype, and if they had any other comments they wanted us to know.

### **Key & Other test Measures**

**Success:**

- Tasks completed with ease and in a timely manner.
- Signs of positivity towards UI design.

**Errors:**

- Unexpected actions taken.
- Signs of confusion.

### **Team Member Roles**

- Greeter: Rachel
- Facilitator: Melinda
- Note-Taker: Shimea
- Observer: Chloe

## **Results**

We asked our participants to discuss as they completed tasks, but asked questions at the end to gain their overall feedback. The following is a summary of the feedback we received:

### **Mobile App:**

All four participants:

- ...were confused by the schedule button after confirming their instructor.

Three participants:

- ...felt like the success page should have details on your scheduled class.
- ...were confused on how they would be reminded of the classes they scheduled (One suggested a google calendar add-in to keep track of all your scheduled classes).
- ...liked the overall style of the UI, and felt it was engaging.

Two Participants:

- ...liked the simplicity of the UI as they both felt it made it easier to follow along with what was happening.
- ...liked the handwritten font and said they preferred that over a regular text font.

One participant:

- ...felt like the text at the bottom of the friend's section was unnecessary.
- ...wished she could see where she stacks up against her friends on the 'View Stats' page.
- ...felt the back button was confusing since it was at the top for some pages and at the bottom for others.
- ...liked being able to see how much time is left until a live class starts on the 'Join Live Class' page.

### **VR App:**

All four participants:

- ...were initially confused on how to join the live class, with so much on the screen they struggled with finding the play button that would let them join.
- ...were confused with the chat function.

Three participants:

- ...had positive reactions to their first
- ...felt like it would be hard to take the time to chat in this manner while working out (“Shouldn’t it just be audio?”).
- ...were confused how they could exit the class after joining. (There was no exit button on the class page)

Two participants:

- ...were confused about recording their speech in order to communicate.
- ...felt like it would be a hassle to have to read the chat while trying to keep up with what the instructor is doing.

One participant:

- ...liked that you would speak to chat instead of typing.
- ...wondered how they would be able to turn off their avatar cam/microphone in case they wanted a water break.

## **Discussion**

Our low-fi prototype gave a lot of helpful insights into the UI and functionality of our mobile app, but there were some complications and limitations with our VR app. For the first task, the two main things participant's commented on was the back button and the confusion with confirming their instructor. Since the back button lacked a consistent spot on each screen, it was a little confusing for participants to find it on certain screens. In our next iteration we will choose a single spot for the back button. As for confirming instructors, a lot of participants were confused when they were brought to a similar screen after confirming their instructor. The schedule button in the bottom right felt redundant and unnecessary. In our next iteration we will make sure that after confirming their instructor, users are taken to the next screen to choose a date and time.

For the second task, there was a shared confusion amongst the participants when trying to join the upcoming live class. One participant felt as if the extra menus of information, like the ‘Friends Activity’ wasn’t necessary and only added to the confusion. In our next iteration we will focus on simplifying the UI and making it less cluttered. For example, if a user wishes to see their friend’s activity, they will have to click on a button that would then lead them to that specific menu. This way we don’t have a lot of information all on one screen. Another thing pointed out that was overlooked on our end, was the inclusion of an Exit button once you joined the class. We will include that next time.

For the third task, a majority of comments from participants were towards the chat function. Most participants felt like having to read the comments of other classmates would be a hassle while working out. This leads back to what we stated above, about there being complications and limitations to our low-fi VR prototype. When it comes to the community task, our vision is that users would be able to see other users' avatars and talk to them as if they were in the same room. It's a task that would require little to no UI, and since this was a UI focused prototype, we thought we had to try to simulate this task with some form of UI. We now know this was not the way to go. We should have found a way to implement this task even with its lack of UI as we probably would have received more helpful feedback from our participants. For our future iterations we won't add UI just for the sake of UI and will instead work towards getting our vision across in whatever way we can.

Overall, participants liked the style of our UI design with two participants commenting that they actually prefer a more handwritten style font instead of text. Achieving the first two usability goals did not go very well as there was a lot of confusion, but the last two usability goals went well aside from the confusion on the exact advantage of having a text chat. Unfortunately, the implementation of the last two usability goals isn't our final vision.

Moving forward, we will consider implementing the following:

- Details of users' scheduled classes on the success page
- A way to add the scheduled class to a user's calendar
- Simplified UI (Less cluttered screens)
- A way to simulate our vision of real time conversations between users

## Appendix

### Critical Index Log

0. Participant progressed without hesitation
1. Participant hesitated or otherwise had to think about the next step
2. Participant had an issue progressing to the next step
3. Participant had to ask for help to progress
4. Participant could not progress

#### **Participant 1**

Incident	Incident Log
Wowed/amazed by VR prototype UI – “woahhh” when first introduced to the VR prototype	0

Confused about confirming an instructor during scheduling – “I thought by clicking on the bio page I had already scheduled the class—it would maybe be better as a popup instead.”	3
Confused about if it was audio transcription or text during live chat task	3
Awkward interaction switching from live chat page to instructor feedback page	2
Noted that the back button was located in different places on different pages	2
Took awhile to complete task “receive workout instructions” (i.e. <i>find</i> and press the play button)	1
“I like that it’s a voice message bc I can’t really type while working out”	0
first class was to schedule a task: on the mobile homepage: “I’m torn between browse class and join live class, but to schedule I assume I should browse”	1

## Participant 2

Incident	Incident Log
Reached the ‘Browse Classes’ Screen	1
Selected a duration	1
Selected a focus	1
Confused about confirming an instructor to schedule a future class	3
Selected a date and time and successfully scheduled a future class	1
Confused on how to enter a live class	3
Sent a message to the chat	2
Didn’t understand the advantage of a text chat in order to receive comments from other	2

classmates	
Asked for feedback	3
Didn't know how to exit a live class	4

### Participant 3

Incident	Incident Log
Reached the 'Browse Classes' Screen	1
Selected a duration	1
Selected a focus	1
Confused about confirming an instructor to schedule a future class	3
Selected a date and time and successfully scheduled a future class	1
Confused on how to enter a live class	2
Sent a message to the chat	1
Asked for feedback	1
Didn't know how to exit a live class	4

### Participant 4

Incident	Incident Log
Reached the 'Browse Classes' Screen	0
Selected a duration	0
Selected a focus	0
Confused about confirming an instructor to schedule a future class	2
Selected a date and time and successfully scheduled a future class	0
Was confused what the numbers meant in the	1

“View Stats” section	
Confused on how to enter a live class	3
Sent a message to the chat	0
Didn’t know why there was a voice recording being sent when the chat seemed to be in text format.	3
Didn’t know how to exit a live class	4

## **Blank Consent Form**

MetaGym's prototype is being produced as part of the coursework for Computer Science course CS 147 at Stanford University. Participants in the experimental evaluation of this prototype provide data that is used to evaluate and modify the interface of MetaGym. Data may be collected by interview, observation and questionnaire.

Participation in this experiment is voluntary. Participants may withdraw themselves and their data at any time without fear of consequences. Concerns about the experiment may be discussed with the researchers (Shimea Bridgewater, Melinda Gong, Chloe Huang, Rachel Naidich) or with Professor James Landay, the instructor of CS 147:

James A. Landay  
CS Department  
Stanford University  
650-498-8215  
landay at stanford dot edu

Participant anonymity will be maintained by the separate storage of names from data. Data will only be identified by participant number. No identifying information about the participants will be available to anyone except the student researchers and their supervisors/teaching staff.

I hereby acknowledge that I have been given an opportunity to ask questions about the nature of the research and my participation in it. I give my consent to have data collected on my behavior and opinions in relation to the MetaGym's research. I understand that I may withdraw my permission at any time.

I give consent to be videotaped during this study:

Yes       No

I give consent to be audiotaped during this study:

Yes       No

I give consent for video or audio recordings from this study to be shown to people not directly involved with this research during/in class, seminars, reports, or scientific presentations.

Yes       No

Name \_\_\_\_\_

Participant Number \_\_\_\_\_

Date \_\_\_\_\_

Signature\_\_\_\_\_