The Method

We tested with 8 users - 4 pairs who thought they were working together. We introduced the basics of the task with the pairs of users, and then took them to separate rooms. Individually, we had the users listen to the following script:

"Welcome to the Knot User Test.:
Together, you and {{partner}} will attempt to get to 100 jumping jacks.
Please do the following

1. *Make a knot on your device for you and your partner.*
2. *Start doing jumping jacks*
3. *Every 15 seconds we will pause please put in your progress into the knot below.*
4. *If your partner falls behind, use the Knot UI to send him/her motivation*
5. *Throughout the process, please think out loud*

As a reminder, we are testing the interface, not you. Feel free to voice all frustrations while thinking out loud."

To disguise the fact that the computers could not communicate with each other, we separated the two users and told them that they were each creating the Knot. We also set the "other" user's progress to be inputted on a time delay so it actually seemed that the two machines were communicating (All about that Wizard of Oz!). We let them have at the interface and break it every way imaginable. Once they filled up the knot with their computerized partner, we asked them a couple questions. Once they answered the questions, we debriefed them and explained the test, and let them comment on whatever they felt was at issue.

The Results

Here is the feedback we received from our user testing, ordered by how often each problem/comment/opinion came up between our 8 users:

1. **Motivational salience:** We made the partner's name on the interface glow red and blink when the partner was falling behind. We did this to visually emphasize the text in hopes that would lead users to hover over it and see the tooltip telling them to click it to send a message. None of our users found this interaction and didn't get to send a message to their partner.
2. **Colors:** We received a lot of comments about the use of color in our prototype. Most of our testing users felt like the color enhanced the different roles within the prototype and made the form and structure of the application very clear. For example, it was apparent to all users right off the bat that the two growing color bars reflected contributions from them and a partner.
3. **Slider issues/dragging was confusing:** People often expressed, either through frustrated attempts to try to get the small dragger knob of the range slider to move or when they thought out loud and explicitly told us the dragger was "hard to click", that the slider to log activity frequency was buggy and not accurate. We had also made a number input field that reflected the current slider value and could be edited to edit the slider value in turn. None of the users found that the input could be edited.
4. **Clicking on Interface to Add Progress:** People found it difficult to make the first click to add progress - one user never even got to that point, she just kept clicking add knot because it seemed like it was the only thing that she could do.
5. **Overall Feedback Concerns**: Many users found it frustrating not see their own progress and intervals without clicking. There were also concerns about being able to see how much the partner was actually contributing.
6. **Competitive Nature**: Many users would see the green opponent bar increase more than they had, and in response would speed up their jumping jacks. They felt like they needed to catch up even though this was about collaboration.

7. **Messaging**: People *wanted* to communicate and send messages to their partners (once they found this dialog). Specifically, Jonathan said that he would send two types of distinct messages depending on the nature of his relationship with a person: he would positively encourage some people with comments like “Keep going, you can do this!”, but with closer friends he said he would give them comments resembling “trash talk” to get them to achieve more.

The Reflections

One deep design insight we gained from user testing this week was that it’s very easy to tie common tasks to competition: even when we had changed the visual design of our prototype (from stacked bars going to one side to a gradient that slowly came together), friends still picked up on a competitive element (which was ultimately motivating, but not the source of motivation we had originally wanted to encourage). Instead of fighting this element, it makes sense to welcome it with open arms - collaboration can come from competition.

Personal messages are powerful. Sending the messages evoked very positive responses; people felt like they weren’t “bothering” people because it was ultimately for a good cause. In addition, people could see these sorts of interactions tied into inherent social relationships. It remains to be seen whether this would have a distinct impact on developing social connections: that would need to be done in a thorough study over time. We are going to capitalize on this by trying to make the gateway to the partner motivation button more salient visually.

Regarding the visual aspect of the prototype, we got a lot of feedback on which elements conveyed the message we intended, and which ones failed in this respect. Two of the major pain points were the slider and the flashing partner name as a gateway to a motivational messaging action. Based on this feedback (nobody clicked on the flashing partner name in our test group and half of our test group had trouble adjusting the slider to log activity), we’re going to refactor the logging interaction and “nudging” interaction for our final prototype. It looks like we’re going to get rid of the “dragging” interaction which two users cited as “not natural-feeling” and move towards more of an adjustment-based logging input (minuses, pluses, and a input box that be typed in for larger quantities). With the motivational messaging (which was valuable when users found it), we are going to use more of a recognizable, visual icon that would be more intuitive to click.