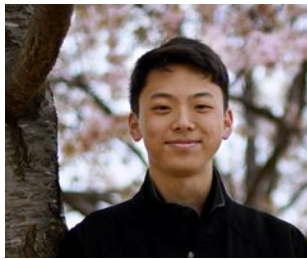# **Assignment 2:** Needfinding, POVs, HMWs, and Prototypes

I. Introduction

The Team:
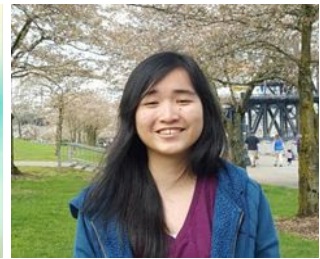

Alex Lee   *Jeremy Marcelo*   *Melinda Wang*   *Sarina Wu*

II. Problem Domain

Our problem domain is *helping dancers capture ideas and feedback*. Our initial needfinding for creators revealed a tension between wanting to receive feedback and fear of unhelpful critiques, as well as a need to capture ephemeral inspiration. Through our additional needfinding this week, we focused on dancers and explored in greater detail their specific experience with ideas and feedback.

III. Initial POV

We met Kevin, the founder of OnOne Dance Studios and an experienced dancer. We were amazed to learn that Kevin squeezes in small blocks of time throughout his busy day to choreograph dances, but isn't always able to capture inspiration that strikes him throughout the day. It would be game changing if he could capture his inspiration no matter when or where it strikes him.

IV. Additional Needfinding

Based on our initial needfinding and new focus on capturing ideas and feedback, we conducted interviews of dancers from varying genres. We sought to find dancer specific pain points in choreographing and learning a piece.

We first met *Joan Chen*, a current Class of 2019 Stanford undergraduate and the co-director of the collegiate, hip-hop dance team named Alliance Streetdance. She expressed the difficulty with: general feedback being adopted by her team, though at the same time not having enough feedback from the choreographer for each person.

We also talked to *Arjun Arora*, a member and past leader of a Kpop dance group. Since Kpop dance focuses more on synchronization and matching the original choreography, Arjun found cleaning and giving feedback to be difficult. He felt most frustrated when helping a single dancer learn a move and failing, because it meant they had to practice more on their own or that he was "taking time away from improving the group's execution" of the piece.

Sophia Barton is a dancer classically trained in jazz, tap, ballet, contemporary, hip-hop and a current member of the collegiate hip-hop dance team Dv8. Sophia told us that choreographing was a difficult task for her personally—she needs to find a song that "speaks to her", which may involve weeks of song finding. Once she has one, she analyzes the mood and lyrics of the song, and requires a mirror; "I need to see how the moves look on me."

Leilani Tian is a professional ballerina of the Ballet Austin 2nd Company. Leilani told us that the appeal of constant tangible goals and having a great support system consisting of family and friends has allowed her to push this far into her career. However, she noted that choreographing group pieces was especially difficult for her as it was "hard to visualize the formation changes."

We met *Sunny Wu*, a Stanford undergraduate who took multiple social dance classes and recently attended a hip-hop dance workshop. She commented that, unlike her experience in social dance, her experience at the workshop was isolating. Sunny wishes that she could have "received more personalized, individual feedback" and felt that the large group setting of the workshop discouraged individual feedback.

V. Revised POVs, HMWs, and Solutions

The best HMW statement for each POV is italicized.

POV 1

We met Sophia, a dancer on a collegiate, Bay Area hip-hop team. We were amazed to learn that individual, poignant feedback from the choreographer was extremely effective for team members, yet difficult to provide for each member on the choreographer's part. It would be game-changing to have every dancer receive quality, specific feedback for every piece.

- *How might we get the dancers to see their mistakes more efficiently?*
- How might we help dancers see how their dance moves differ from the choreographer's?
- How might we take the responsibility for feedback off just the choreographer?

Solution 1: Visually tracking an individual's performance of a dance and pointing out their differences from a video of the choreographer.

POV 2

We met Leilani, a ballerina who is currently in the Ballet Austin 2nd Company. We were amazed to find out she struggles with choreographing formation changes and blocking through mental visualizations of the finished piece. It would be game changing to provide a way for her to visualize formation changes in relation to the music.

- *How might we help the choreographer's ability to visualize dance with music?*
- How might we make the blocking process more like an animated football playbook?
- How might we improve the experience of creating and visualizing these dances?

Solution 2: A front and top view app to create formations with circles and figures.

POV 3

We met Arjun, the president of a Kpop dance group. We were amazed to learn how difficult it was to teach beginning dancers how to execute dance moves because they didn't have the body awareness to match moves. It would be game-changing to make it easier for new dancers to improve in dance execution.

- *How might we make learning to dance more like Just Dance?*
- How might we make new dancers feel what it's like to be experienced?
- How might we make dancing a part of their every move, so they improve more passively/unconsciously?

Solution 3: Virtual Reality environments and situations to practice dance moves.

VII. Prototypes

Prototype 1: *Matching Dance Styles with Feedback*

For this experience prototype, we wanted to test the assumption that having a physical difference in two dancers' dances pointed out to them would significantly help them in syncing their dance. We wanted to have two dancers complete a generally hard to sync move, and point out differences to the dancer in order to match the "choreographer", much like our solution would aim to.

To do this we recruited friends who were dancers and had them perform a basic wave move to four counts alongside Jeremy, our "choreographer." We then had the dancer stand behind the choreographer and break the moves into pictures. The dancer would watch the choreographer and match each body position, and we would then point out differences. After 3 minutes of matching and pointing out differences, we once again had them perform the wave together.

Volunteer feedback was relatively positive, and they noted that "I mostly focused on watching the choreographer, but the small pointers on bending my wrist more etc., helped because I didn't know I was doing them differently." We did run into the larger problem of body awareness, where people who weren't quite in tune with their body couldn't fix differences even when they were pointed out. Overall, comparisons of the videos before and after the matching, showed a significant improvement in synchronicity in movement quality. This validated our assumption that making dancers aware of small differences in their body "pictures" would help them dance in sync.

Prototype 2: *The Effectiveness of Visuals and Interaction*

We realized that one of the key assumptions that we had made for our second solution was that choreographers would find a front view of formations to be helpful and that they would want to move away from the traditional pen and paper solutions. In order to test this assumption,

we decided to have a choreographer make two attempts to create 3 different formations and their accompanying transitions; however the first attempt would be to utilize the traditional pen and paper approach to create various formations without any visual aids while the second attempt would have visual aids in the form of actual physical people standing in front of her as well as paper place-markers that she can shift around on the table. The people involved would represent the front view of the formation presented in our solution while the place-markers would represent the on-screen shapes that can be shifted around in the solution.

In our test, we chose Dana Zhao, a student choreographer and several other students, to be the physical representations of the place markers. Through the experiment, we were able to learn that the front view was extremely effective in helping Dana visualize the audience's perspective of her formations. Consequently, we concluded that our assumptions were correct in that providing a front-facing view of various formations as well as an eagle's eye view truly does help the choreographer visualize the formations and makes their creative process easier.

Prototype 3: *Translating Game Learnings to Dance Moves*

For our third solution, we wanted to test our assumption that practicing dance moves in a gamified setting would translate into improved dancing ability outside the game. To test this, we decided to teach an inexperienced dancer shooting, a dance move that could be broken up into three parts: punching, kicking, and jumping. We made a prototype that consisted of three pads that indicated where the participant (an inexperienced dancer) would hit targets in a virtual reality experience.

We tested the prototype by recruiting *Avi*, a Stanford freshman who did not have previous dance experience. We had him first try to replicate the move while watching the choreographer. Next, we asked him to punch and kick the pads to the beat, and then to jump to the beat. Finally, we asked him to perform the move again.

From Avi's feedback after going through the process, we learned that the feedback of hitting the pads was helpful, that not all of our analogies were effective, and that he felt it was easier to do the move with the choreographer doing it beside him. From this, we found that a simpler experience would be more effective than an overly complex environment and that providing a reference video of the choreographer would be helpful. We concluded that a virtual reality environment could help someone learn a dance move only if it was tested thoroughly and the solution itself would have a limited reach in teaching ability.

VIII. Main Takeaways

We decided to pursue the front and top view blocking app for our final project. We found this to be the most exciting, impactful, and feasible idea. Through prototyping, we learned that the third solution would be limiting in the amount of dances it could teach, due to the difficulty in finding appropriate metaphors and environments for each move. The first prototype was based on valid assumptions, but had less possibilities for features and user interaction, while also being a smaller pain point than our final choice.