

03

POV / HMWs / Solutions / Experience Prototypes

Team 

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Problem Domain

Equity in College Taekwondo and Rugby Education

How are niche sports taught in an American College and who gets left behind?



Point of Views

Unpacking insights from our interviews

POV 1: Strength Training and Nutrition

We met Jenna, a member of the Stanford Taekwondo team, who has a 4th degree black belt and has done Taekwondo casually since she was little but recently started competing in college

We were surprised to learn that she had **zero to little knowledge** regarding sports mechanics and how her body works, which led to injuries and physical weaknesses. This caused her to turn to **external resources** such as a strength training source and personal trainer to help build physical strength for Taekwondo

It would be game-changing if information regarding sports mechanics and how bodies work were easily accessible within the Taekwondo training space

POV 2: Remote Taekwondo Learners

We met Kim, a young hispanic Taekwondo World Champion who own her own Taekwondo dojo. She trains students in an underprivileged area in Texas both in recreational and competitive Taekwondo

We were surprised learn that despite seeing **remote instruction** as a good way to grow the competitive team, masters may sometimes **forget to give feedback** to remote learners when there are in-person learners

It would be game-changing if Remote Taekwondo Learning was just as effective and had just as much feedback as in-person Taekwondo learning

POV 3: Leveling the field for American Coaches

We met Rich, an Northern Irish rugby player who has been coaching in the US for quite a long time. He is the head coach of Stanford Rugby team and the interim head coach for the USA women's national team.

We were surprised learn that developing as a coach, **especially as an American**, is really difficult. Becoming qualified as a rugby coach as a American **does not have a general path**, and would really need to take the learning into their own hands.

It would be game-changing if American coaches were able to reach the same level of experience & qualifications as International coaches.

How Might We ... ?

Framing the problem for solution ideation

HMW Group 1: Muscle / Strength / Nutrition

HMW incorporate knowledge of muscle movement into Taekwondo training

HMW incorporate expert feedback to strength training

HMW incorporate knowledge about body mechanics to athlete's regular routine

HMW provide cheap access to strength training plans

HMW make nutrition and strength training easily digestible for younger audiences

HMW Group 2: Online Coaching Settings

HMW leverage the reach of online courses to grow a competitive team

HMW take advantage of the online setting to provide unique benefits for online participants

HMW Group 3: Coach Development

HMW help create
a reproducible
path for American
coaches to follow

HMW help increase
communication
between American
and International
coaches

HMW help
American coaches
gain experience in
international
settings



Solutions & Experience Prototypes

Creating solutions and testing assumptions

Solution 1: Digital Coach Clone

Solution: Foundation models will help to create a “digital clone” of coaches that will be able to give personalized feedback to each student athletes in real time.

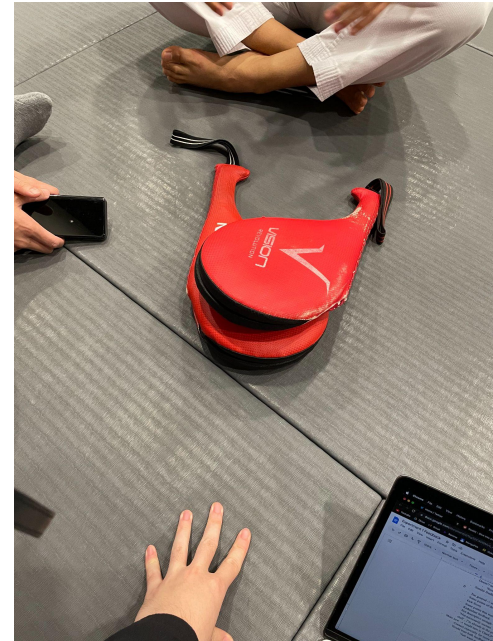
Assumption: People will **trust** and **accept** live feedback from an AI source.

Experiment: Give live feedback to a Taekwondo Athlete about their Axe Kick and Round Kick from both a peer and ChatGPT

Results:

1. AI feedback is currently too general and lacks sufficient context when compared to peer feedback.
2. ChatGPT’s feedback would be trusted as a “more overall view”.
3. More useful to beginners than those in training

The assumption is **validated**



Solution 2: Personalized Exercise Programmer

Solution: A two-part solution that utilizes a CV model that is able to break down the biomechanics of any particular exercise and then generate personalized exercise programming that develops the muscles necessary for these motions for any sport, no matter how niche.

Assumption: When given an exercise sheet, will people actually **do** the exercise?

Experiment: Give 2 Taekwondo athletes training plans and see if they follow the plan recommendations

Results:

1. Both athletes managed to figure out times to fit in their 30 minute exercises and often did them either before or after their already scheduled exercise times
2. Athletes had trouble figuring out unfamiliar exercises with just the text explanations
3. Some confusion regarding how certain exercises were relevant to chosen goals

The assumption is **validated**



Solution 3: Context Aware Nutrition

Solution: A tracker which will both break down the specific nutrition benefits of foods as well as the athletic benefits of each. This tool will help track nutritions of eaten foods and also recommend foods for consumption both before and after sustained and intense physical activity.

Assumption: People **will choose** more beneficial foods when eating with a short-term goal in mind

Experiment: Given specific scenarios (before and after a workout, before and after a tournament) and food options, have participants choose between different food options.

Results:

1. Knowledge for pre-workout and mid-match is lacking → Knowledge Gap
2. Often chose the best food for post-workout meals
3. Consistently chose not to eat pre-match to avoid feeling heavy, often in scenarios where simple carbs could have significant benefits.

The assumption is **somewhat validated**

Options

- a. Nothing
- b. Fried / fast food, or whatever's available
- c. low-carb, high-protein
- d. Simple carbs, healthy fats
- e. High-protein, complex carbs

Scenario 1: Off-season, training day

- pre-practice: b. whatever's available
- post-practice: e. High-protein, complex carbs

Scenario 2: In-season, match day

- breakfast: d. / a.
- pre-match: a.
- mid-match: a.
- post-match: b. / e.



Questions & Feedback