

# ASSIGNMENT 2



*POV, HMW, Experience Prototypes*  
ACCESSIBLE DESIGN STUDIO

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# TEAM 1



**Po-Ting Lin** *Master's in Materials Science*



**Frankie Sperza** *Sophomore in Product Design*



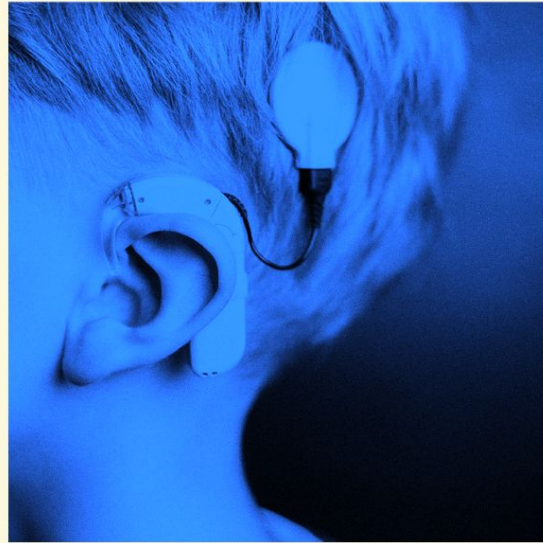
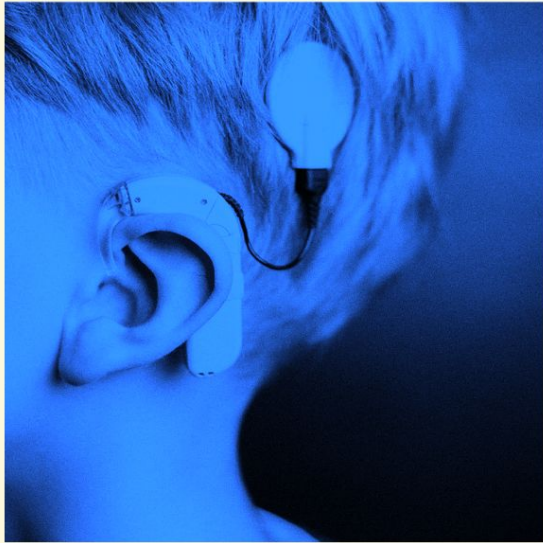
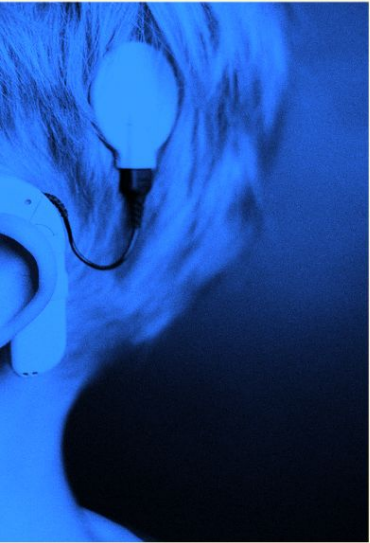
**Jared Poblete** *Junior in Symbolic Systems*



**Emily Huang** *Senior/Coterm in CS*

# THE DEAF COMMUNITY

*Domain*



# INITIAL POV



*We met...*

Johnny, a hard of hearing college graduate who studied biology and grew up in a hearing household

*We were surprised to notice...*

He prioritizes listening to and understanding the lyrics in a song

*We wonder if this means...*

Lyrics and words are an integral part of experiencing music as a member of the Deaf / HoH community

*It would be game-changing to...*

A consistent way to understand and experience the lyrics to a song

## ADDITIONAL NEEDFINDING



# DEE & MASON

*Hearing mom of Deaf child*

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### Quotes

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“He hums and tries to sing along to music.”

“He will watch [Youtube videos] with or without his technology [cochlear implants]”

“He gravitates toward ASL, and outside of this household our family doesn’t know enough”

## ADDITIONAL NEEDFINDING



# JESSICA DAVIS

*Cochlear Implant Wearer and Board Member  
of MindWorks Collaborative*

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### Quotes

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“My hair texture would not allow the magnet to stick to the side of my head.”

“I think that inclusiveness is first thought about as race and gender, and disability *last*.”

“I’m just trying to figure out what I can do and what I can’t without [the cochlear implant]”

# REVISED POV 1



*We met...*

CJ, a Deaf mother and ASL professor who grew up in a predominantly deaf household

*We were surprised to notice...*

CJ was saddened that some deaf children aren't exposed to sign language in their homes

*We wonder if this means...*

A more important part of ASL education occurs at home and due to a community of ASL users

*It would be game-changing to...*

Connect disperse members of the deaf / HoH community to feel less isolated

# REVISED POV 1

## How might we?



integrate the cultural significance of ASL into education

create an immersive experience for people trying to learn ASL

support connection between various hearing ability communities

make Deaf events more widely known (especially for deaf children)

support education for deaf children/hearing parents on ASL and/or the Deaf community

make families with deaf children aware of the importance of sign language

make language learning approachable instead of intimidating

assist predominantly hearing schools to support deaf children

make learning ASL more collaborative

connect more people in the community by using sign language

make ASL commonly taught in schools

make learning ASL easy from everywhere



# REVISED POV 2



*We met...*

Johnny, a hard of hearing college graduate who studied biology and grew up in a hearing household

*We were surprised to notice...*

He prioritizes listening to and understanding the lyrics in a song

*We wonder if this means...*

Lyrics are a way for Deaf/HoH people to participate in the pop culture phenomena of music

*It would be game-changing to...*

Integrate lyrics into the experience of music in a way that is engaging; find ways to make Deaf/HoH people feel included in pop culture

# REVISED POV 2

## How might we?



keep listening fatigue in mind when adapting predominantly listening technologies

highlight musical intricacies without the proper auditory technology

encourage smaller venues to support lesser represented people (HoH / Deaf community)

support the visual experience of exploring alternate media

incentivise the adoption more accessible practices for the deaf / HoH community

emulate the energy of a live show or entertainment setting

emulate the energy of a more intimate setting

make podcasts better to listen to for deaf people

find a better medium for DHH people to engage in pop culture

make reading lyrics / words as exciting as listening to music

better describe music – (i.e. feelings, emotions, instruments)

improve captioning for live music

# REVISED POV 3



*We met...*

Johnny, a hard of hearing college graduate who studied biology and grew up in a hearing household

*We were surprised to notice...*

He skips YouTube videos that do not have captions

*We wonder if this means...*

He feels left out when videos that he thinks might be engaging do not have captions

*It would be game-changing to...*

Invite him into spaces of interest by ensuring clarity and understanding

# REVISED POV 3

## How might we?



assist creators in ensuring their content supports the Deaf and HoH communities

educate others about the Deaf community and accommodations needed

make closed captioning more reliable and consistent

improve the way that closed captions are delivered

place the onus on the hearing person to make their content more accessible

how can we convey nuanced descriptions in a non-auditory way

make understanding more collaborative between Deaf / HoH folks

make CC more engaging

make hearing people aware that their content is not accessible to Deaf / HoH people

grade every online video on the quality and accuracy of its caption

encourage others to better consider accessibility concerns

find an alternative to captioning

## HMW: POV 1

How might we enable connection between the Deaf and Hard of Hearing community and individuals outside of it?

## HMW: POV 2

How might we prioritize feeling connected through shared experiences for Deaf / HoH people?

## HMW: POV 3

How might we convey nuanced descriptions in a non-auditory way to include the Deaf / HoH community in pop culture?

# SOLUTIONS





## ■ SOLUTION

**Virtual group environment (similar to Clubhouse) centering people in the Deaf / HoH community that supports their preferred method of communication.**



*Some rooms specifically for ASL (no audio), some with combination of video+audio+text (in form of captions)*

## ■ SOLUTION

**Haptic feedback  
phone extension/  
feature that varies  
in intensity based  
on audio input.**



## ■ SOLUTION

**Audio interpretation (provided by hearing people – can be in the form of text, drawing, etc) of different media that have audio...**

**Can be how it makes you feel, details that are important to the overall meaning, or straight up captions.**

*Upvote system to maintain accountability and provide useful/interesting interpretations*





# EXPERIENCE PROTOTYPE 1

## DESCRIPTION

Minimum of three people in a zoom call. All members have their audio off and need to figure out the question “what food do you all dislike”. Only visual cues are allowed, no text or words.

## ASSUMPTION

Communication can be effective and smooth with video only in a small group setting.



# EXPERIENCE PROTOTYPE 1 RESULTS

We interviewed two groups of three people. Both were hearing and due to scheduling conflicts we were not able to interview a third group of ASL speakers.

## Things that worked

- Group decided: “beef tongue”
- Communicating visually
- When someone “took the lead”

## Things that didn't work

- Awkward silence in the beginning
- Some people dominated the conversation
- “Hard to convey abstract concepts”
- People were different sizes on the screen

## Surprises

- “Easier time focusing”
- No one could “talk over” anyone
- They didn't expect to find a common ground and they did

## New learnings

- A visual group conversation can occur on a virtual platform
- In this space there is often only one speaker at a time; helps people stay present
- We need to explore ASL use in digital space

# ■ EXPERIENCE PROTOTYPE 1 VALIDITY

## PARTIALLY VALID

It became clear that visual communication can be effective in a virtual space due to the success of the groups, however this communication style appears to be less fluid and dynamic (more like speaker-audience) than in-person conversation—at least for hearing people

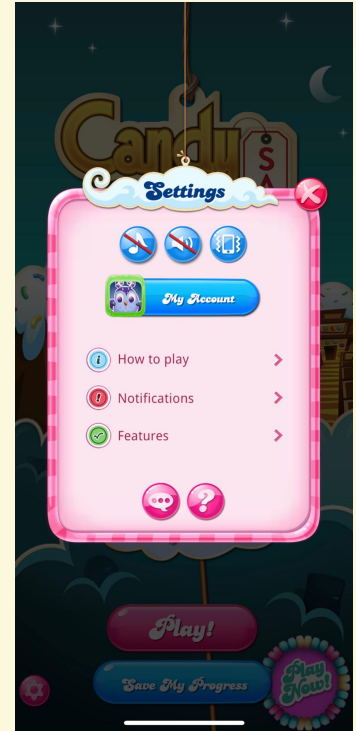
# EXPERIENCE PROTOTYPE 2

## DESCRIPTION

We have a user play Candy Crush on the iPhone for 3 minutes with haptic feedback. After the 3 minutes are up, we have them turn off the haptic feedback in settings.

## ASSUMPTION

Haptic feedback will add to and not retract from what you are watching or viewing.





# ■ EXPERIENCE PROTOTYPE 2 RESULTS

We interviewed 2 people. Due to technical difficulties, we weren't able to test directly with one of them who was hard of hearing (participant A). The other participant was hearing (participant B).

## Things that worked

- Participant B preferred the haptic feedback to the visuals of the game
- Haptic feedback can be useful in urgent situations (participant A).

## Surprises

- Vibration is completely turned off by participant A
- Haptic feedback can be useful when learning.
- Haptic feedback was felt before visual feedback.

## Things that didn't work

- Haptic feedback makes me anxious and distracted (participant A)
- Participant A feels haptic feedback is distracting
- Participant B felt the game visuals were distracting and too flashy

## New learnings

- We need to get more feedback from deaf and hard of hearing people.
- Preference to having haptic feedback is context dependent.

## EXPERIENCE PROTOTYPE 2 VALIDITY

# INCONCLUSIVE

The participant who was hard of hearing didn't experience haptic feedback positively, while the hearing participant did. We would need to test with more hard of hearing and deaf people to get their input.

# EXPERIENCE PROTOTYPE 3

## DESCRIPTION

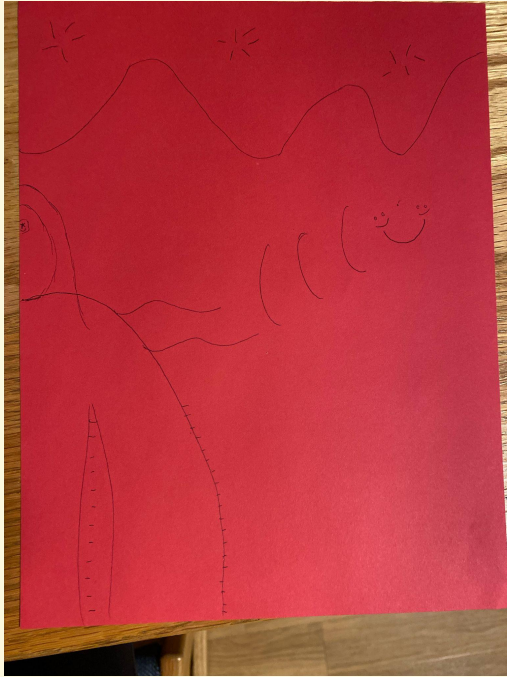
Two interviewees take turns between: interviewee A listening to a song and drawing how it 'feels,' and interviewee B interpreting said drawing. After the exercise, both interviewees listen to the audio together and compare their experience and expectations.

We chose songs that ranged between instrumentals, non-English, and English and observed the difference in drawings.

## ASSUMPTION

A unique audio interpretation can be effective for conveying the nuance in information/meaning in content

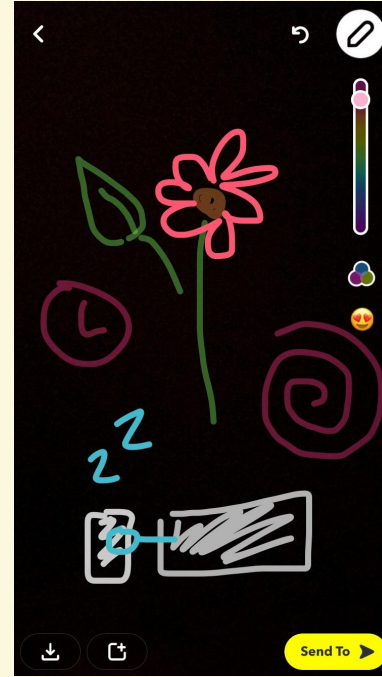
# EXPERIENCE PROTOTYPE 3 RESULTS



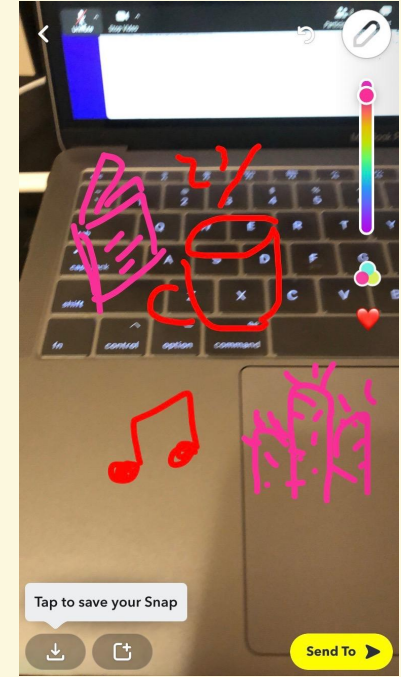
Instagram - DEAN



Corpus Christi - PRETTYMUCH

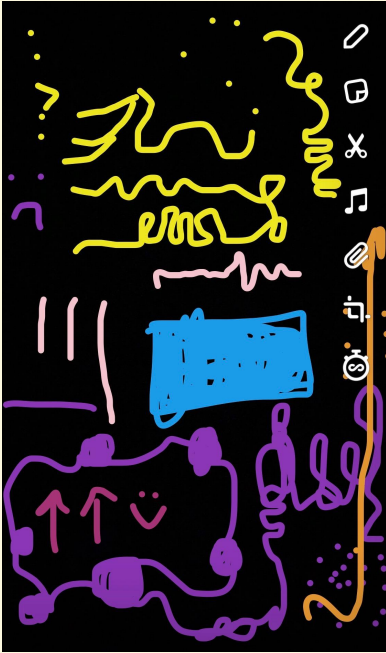


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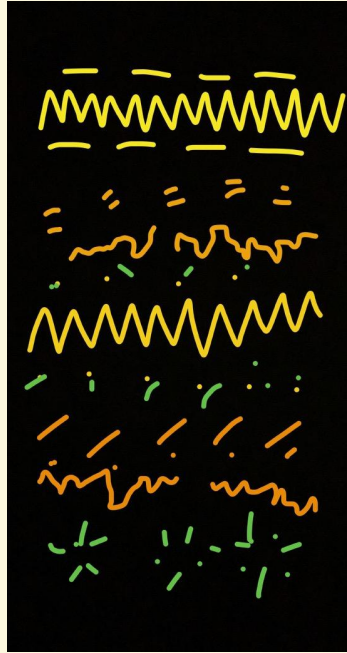


Andy Brown Trio at  
the Whiskey Lounge

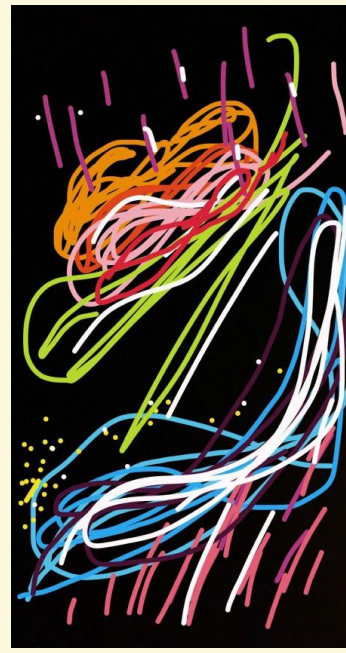
# EXPERIENCE PROTOTYPE 3 RESULTS



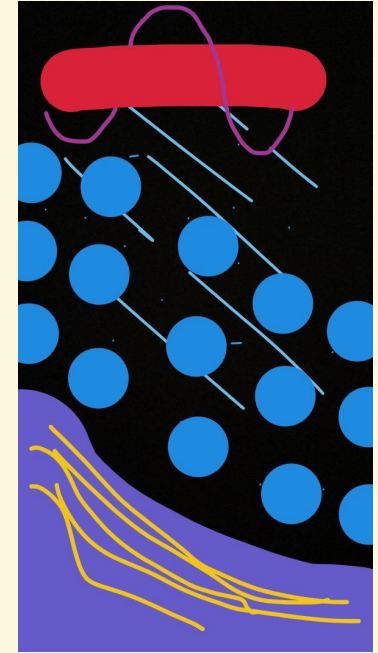
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Andy Brown Trio at  
the Whiskey Lounge



Instagram - DEAN



idontwannabeyouanymore  
- Billie Eilish

# EXPERIENCE PROTOTYPE 3 RESULTS

We interviewed four groups of varying amounts of people. All participants were hearing.

## Things that worked

- Interviewees enjoyed the activity
- Interviewees relayed their feelings through drawing
- Interviewees could accurately extrapolate some kind of feeling from the drawings

## Surprises

- non-English songs had an effect on the approach to drawing
- abstract vs. symbolic
- The constraint of using Snapchat was enjoyable

## Things that didn't work

- Interpretation without info. was daunting
- Doing the exercises sequentially could potentially influence the second drawer

## New learnings

- Guidance and encouragement would help reduce doubt
- People are excited about using this prototype
- Drawing in real time might be interesting to explore

## EXPERIENCE PROTOTYPE 3 VALIDITY

# VALID

To a certain extent, each participant was able to infer some kind of meaning from each drawing, despite the diverse and unique approaches each interviewee had to translating the audio.

*“She got more out of it than I even realized was there” - Participant 015*

# MOVING FORWARD

We want to continue investigating **solution three**

Focus on alt. visuals

Center Deaf/HoH community

## IN GENERAL

Potentially look into centering ASL and/or captions as part of alt. visuals

Continued investigation of haptic feedback with Deaf / HoH individuals (integrate with visuals)

Investigate ways to support alt. visual creators with prompts or suggestions



# SUMMARY

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Most of our problems and investigations centered around creating shared experiences within the Deaf / HoH community and with the hearing community

Accessible design is better refined when more opinions from all communities are collected and compared

Continue searching for more participants in the Deaf community and centering Deaf perspectives in our design