

ARTIST

Reimagining audio for everyone



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Outline

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PROBLEM

Deaf and hard of hearing people are often left out of key nuanced information that is conveyed through audio in digital spaces

SOLUTION

ALTiO is a social media platform that encourages and provides drawings as visual supplements for interpreting audio—providing *alternative options* for everyone to experience content

Design Evolution



Needfinding

Initially, we hoped to find ways to design to improve accessibility for the Deaf and hard of hearing community. To begin this process we connected with individuals who are members of or adjacent to the Deaf and Hard of Hearing communities.

Focus areas: General Inclusion, Entertainment, Mobile apps, Pandemic



Needfinding Results

“Our art has no noise or music”
but the participant enjoys
attending her children’s choir
concerts

“If there’s a video without captions,
I’ll just skip it. Sometimes I’ll try to
go to the comments and piece
things together but it’s usually not
worth it.”

Participants mentioned they
were very frustrated when there
is lag between captions and TV

America is very biased towards
listening to things

“Hearing is something that is
difficult for me, visual is
something that is easy.”

Independence, inclusion, and
representation emerged as
throughlines

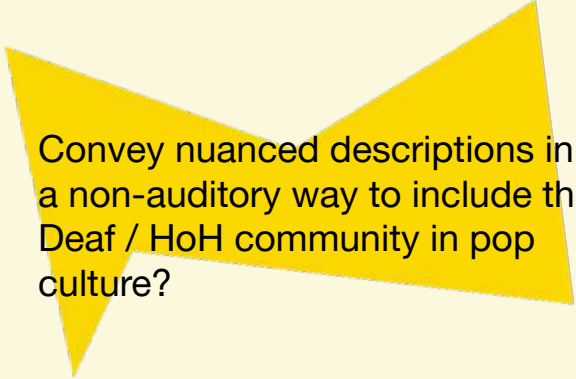


Three Solutions

How might we

Enable connection between the Deaf and Hard of Hearing community and individuals outside of it?

Prioritize feeling connected through shared experiences for Deaf / HoH people?



Convey nuanced descriptions in a non-auditory way to include the Deaf / HoH community in pop culture?

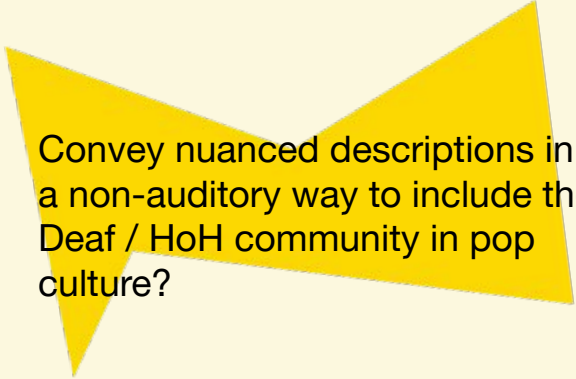


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Solutions

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

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



Audio interpretation provided by hearing people of different media that have audio, can be how it makes you feel, details that are important to the overall meaning

■ EXPERIENCE PROTOTYPE 1

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

ASSUMPTION

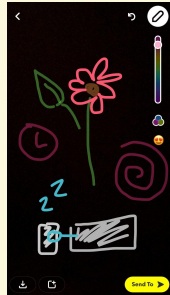
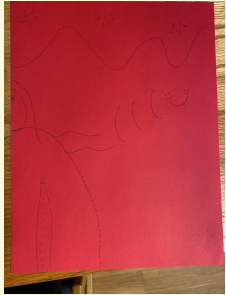
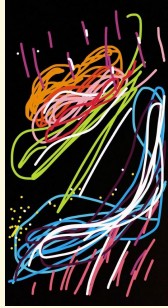
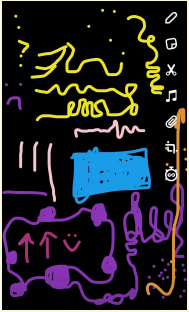
A unique audio interpretation can be effective for conveying the nuance of information and meaning in content

DESCRIPTION

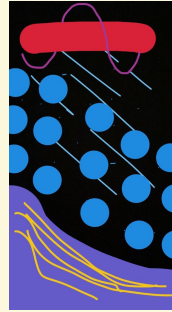
Two interviewees take turns between: interviewee A listening to a song and drawing how it 'feels,' and interviewee B interpreting said drawing. After the exercise, both interviewees listen to the audio together and compare their experience and expectations.

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

EXPERIENCE PROTOTYPE RESULTS



Instagram - DEAN

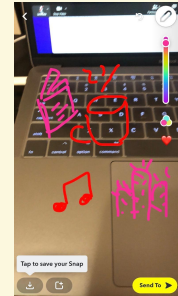


idontwannabeyouanymore - Billie Eilish



Corpus Christi - PRETTYMUCH

Andy Brown Trio at the
Whiskey Lounge



■ EXPERIENCE PROTOTYPE 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 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



“ALTiO”

NOUN

a combination of **alt**ernative and **audi**o that denotes a visual interpretation of audio which can convey a more emotional or descriptive meaning than captioning



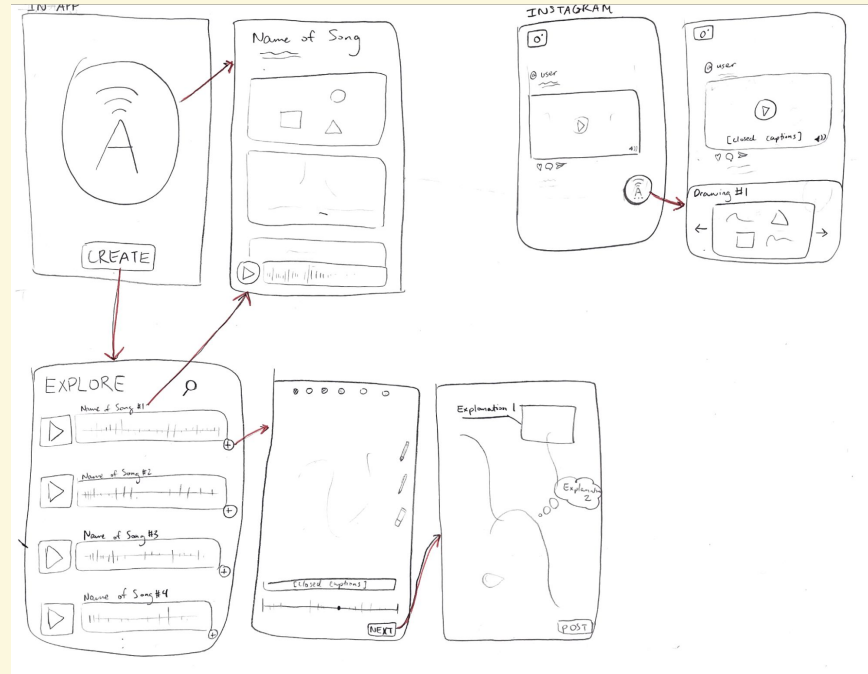
Low-Fi Prototyping

Low-fidelity: Original ALTiO Idea #1



an independent social media platform with drawing interpretations on each post

Low-fidelity: Original ALTiO Idea #2



an audio recognition app/plug-in

Low-fidelity:



We chose to implement the independent social media platform because it requires every post to have a drawn interpretation

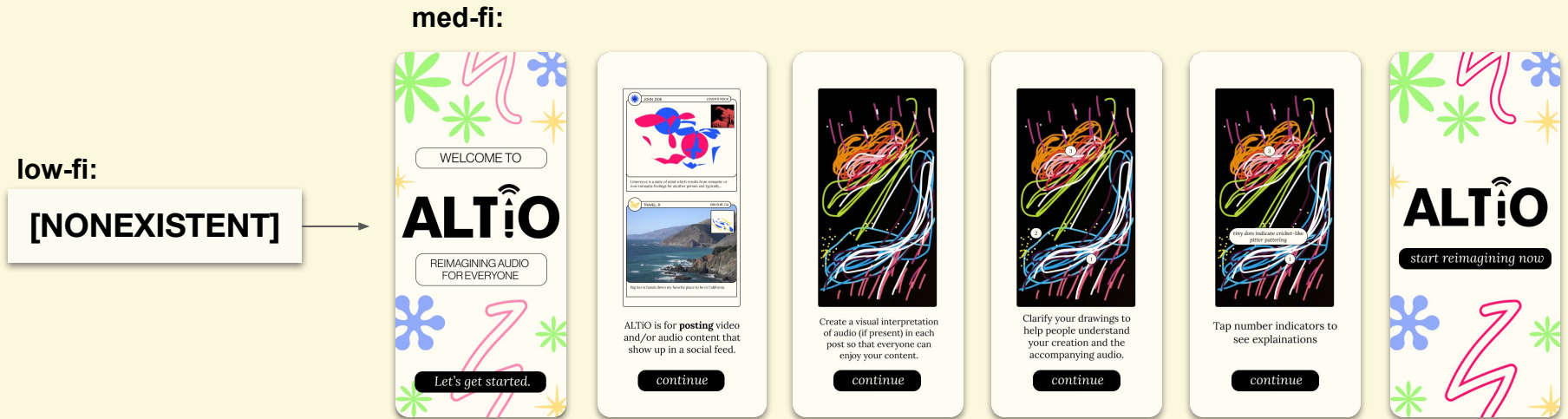


Medium-Fi Prototyping

Revised Interface Design

MAJOR DESIGN CHANGE 1 - Onboarding Flow

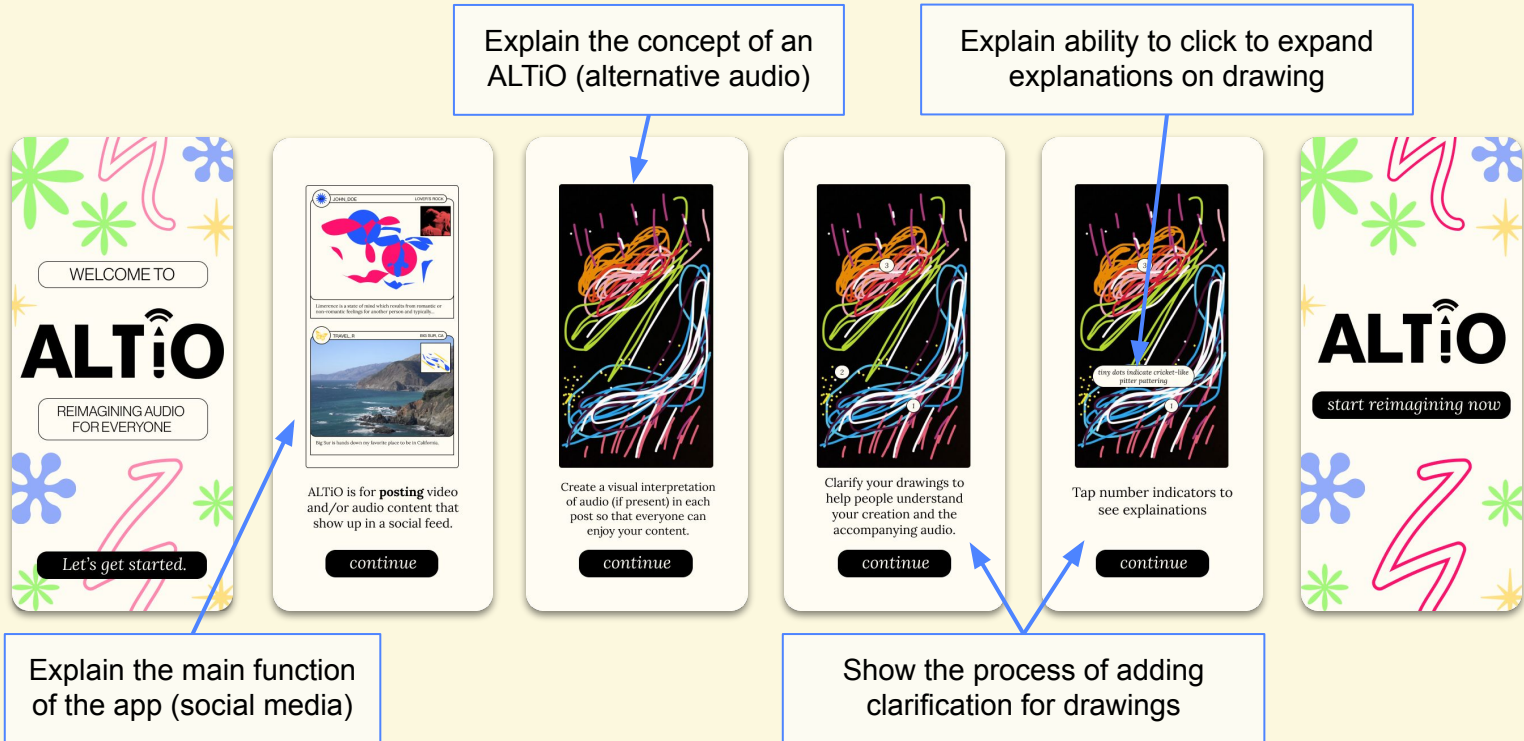
From low-fidelity prototyping, it took one of our users around 15 minutes to understand the purpose of our app.



SOLUTION: Create an onboarding flow to inform users of the purpose and ease user into unique features.

Revised Interface Design

MAJOR DESIGN CHANGE 1 - Onboarding Flow

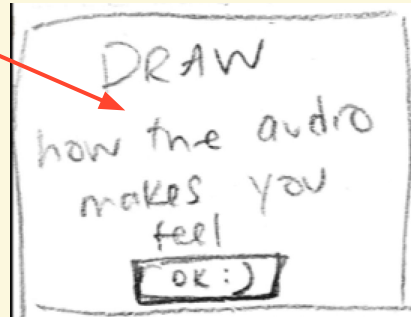


Revised Interface Design

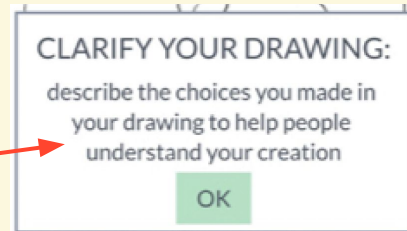
MAJOR DESIGN CHANGE 2 - Revised Clarifications

For some participants, directions were not fully clear around the purpose of the drawings or explanations.

This instruction was vague for many participants - the lack of guidance may make people confused about how to draw their interpretation.



This pop-up failed to explain how users might annotate to clarify their drawings.



Welcome to the drawing screen!
Draw your interpretation at different time points of the content you chose.

OK

We wanted to emphasize that users can draw interpretations at different time points.

CLARIFY YOUR DRAWING
Through annotations, tap to label important parts of your creation to help others understand your choices.

OK

This pop-up clarifies how users might label their drawings and what information to include.

Revised Interface Design

MAJOR DESIGN CHANGE 3 - Starting Creation Screen

For our Deaf participant in particular, in starting the posting process, she was concerned about clicking on the word “audio”. Other users were confused about which buttons were clickable.

Our Deaf participant was concerned about choosing “audio”.

Participants were frequently confused by the design on this page - “audio” is the starting point, and the only one users can click on, however “draw” and “post” both look like clickable buttons.

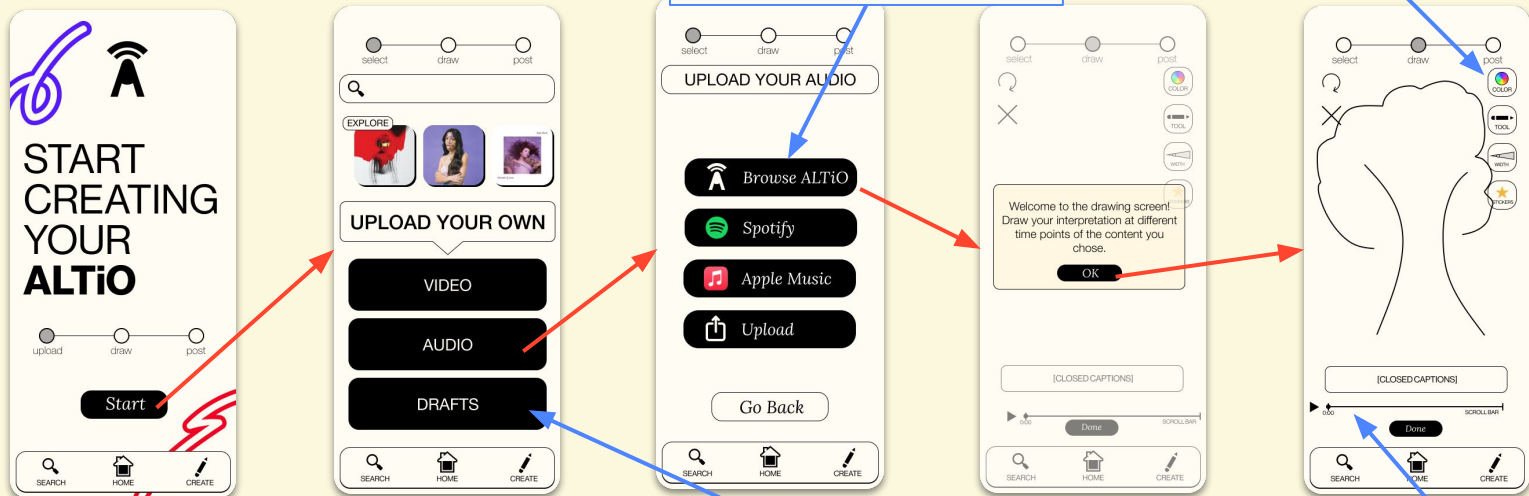


We changed the starting screen to look more like a progress bar, which is present on other screens in the posting process

“Audio” is replaced with “Upload” so that content is not limited to audio, and for ease of mind for participants.

Revised Task Flows

SIMPLE TASK: Interpret audio



Audio can be uploaded from different sources, or chosen from the existing audios in ALTiO.

Drawing screen to draw interpretation, different pickers to change color, tool, thickness, or to include stickers.

Some screens are missing for space concerns, but this is the overall flow.

Video and or audio can be uploaded, or continue posting from a draft saved.

Drag scroll-bar to move to different timestamp to create new drawing at different timestamps.

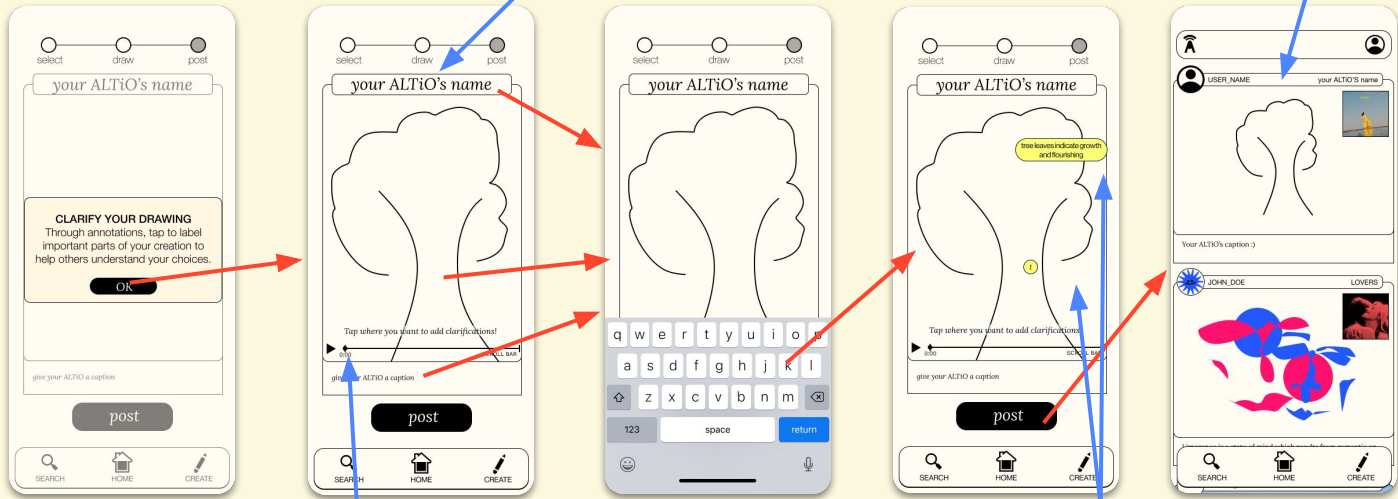
Revised Task Flows

MODERATE TASK: Explain and clarify interpretation

Illustrating the UI of how clarifications showed up was key in this prototype and is important to the clarity and usefulness of the interpretations.

Users can add the ALTiO's name, clarifications, or caption by tapping.

The posted ALTiO is now in the social feed.

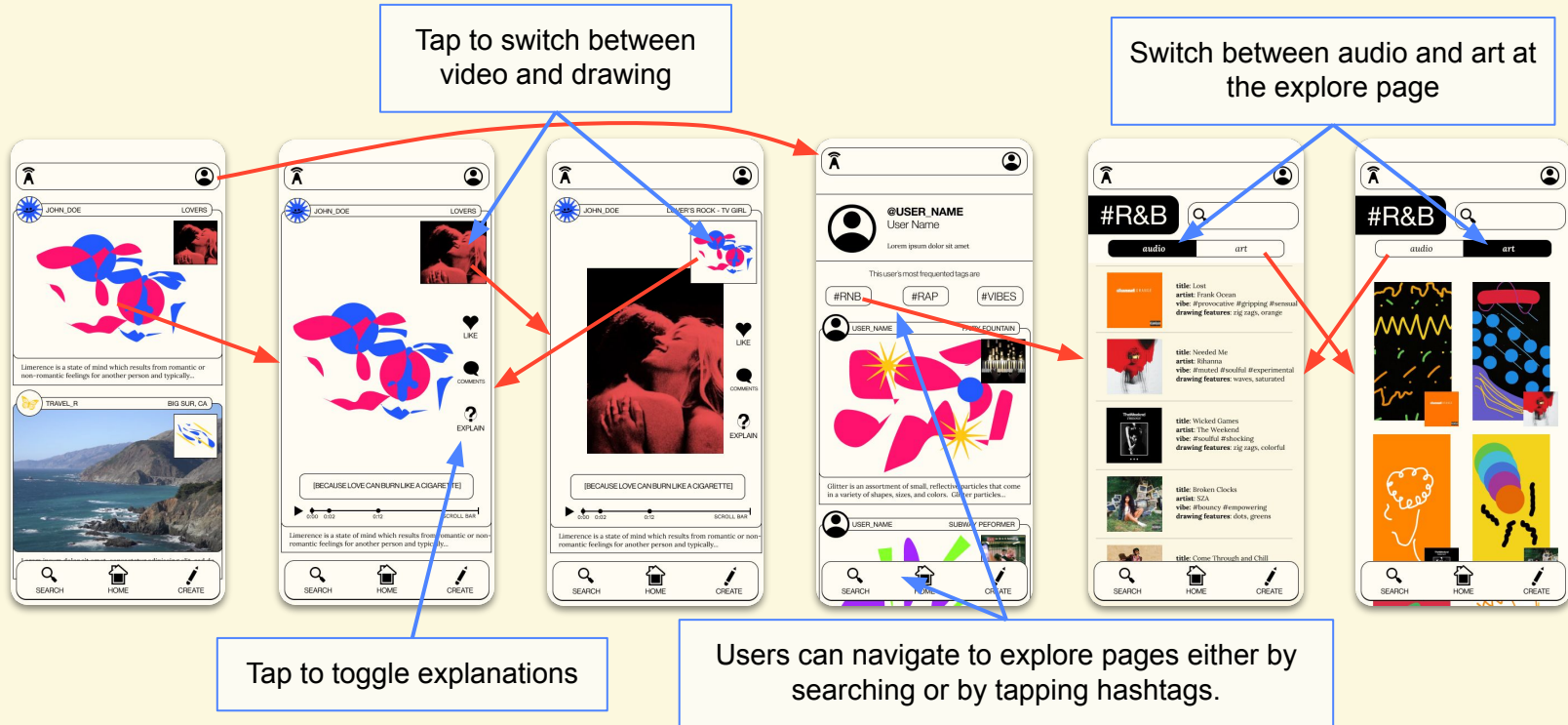


The scroll bar allows for clarifications to be written for different time points.

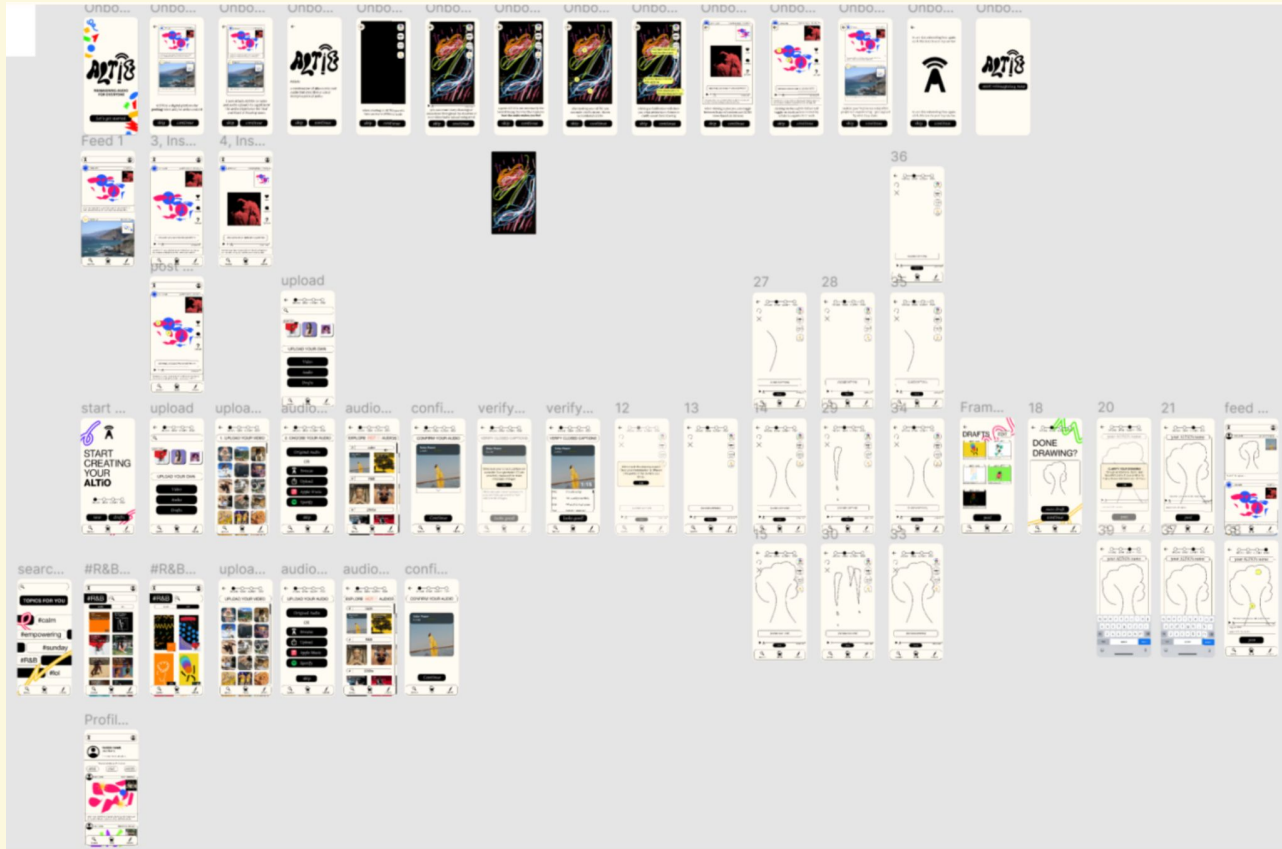
Clarifications show up after tapping the screen and typing them (click to open and close)

Revised Task Flows

COMPLEX TASK: Interact with various interpretations and artists on the platform



Full Med-Fi Prototype



Current Design & Video Demo



High-Fi Tasks

■ **TASK 1:** View an altio

Interact with an altio by viewing the art, captioning, and clarifications

core of our app: including Deaf and Hard of Hearing individuals more fully in social media experiences

■ **TASK 2:** Create an altio

Choose audio, approve and edit captioning, draw your interpretation, and add annotations to explain your art

translating your auditory experience into a visual one

■ **TASK 3:** Explore app

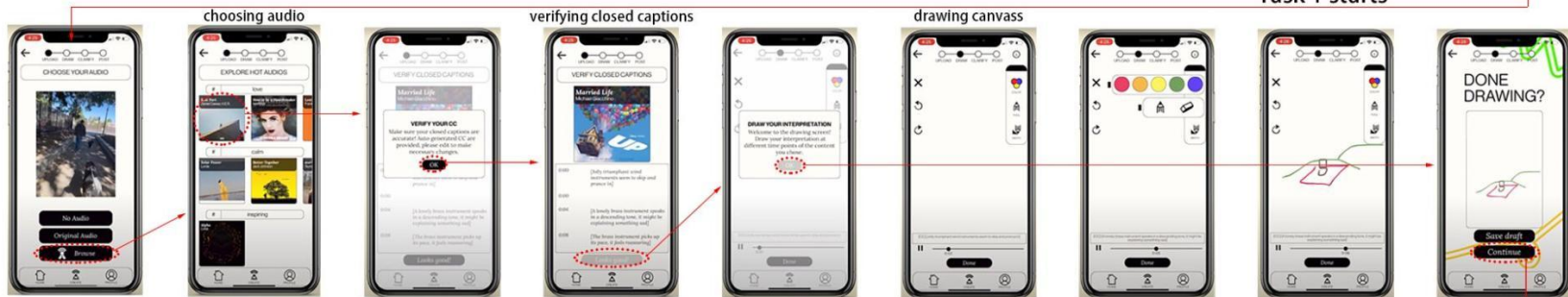
Users can interact with other profiles and search through tags

building community and awareness through inclusion

ALTiO High-Fidelity Prototype



Task 1 starts



Task 2 starts

Task 2 ends

Task 1 ends

Task 3 starts

Task 3 ends



ONBOARDING

familiarizes users with the purpose and function of ALTI8



Future Enhancements



- **Integrate** with Spotify/Musixmatch APIs to get larger audio database and lyrics
- **Explore** written captions as a way for users to interpret audio (especially instrumental audio)
- **Adjust** flows to potentially be less overwhelming
- **Allow** for user authentication, rework content viewing screens
- **Migrate** to pure React Native to allow for more functionality
- **Test** with Deaf/HOH users