DP 2 Toolkit: SKY AI

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Overview

SKY AI is a collaborative learning tool designed to support non-native English speakers struggling with language and cultural barriers in group discussions. The tool dynamically tracks the speaking speed, the pauses, and contribution levels of each group member, providing real-time feedback to ensure all participants feel included and engaged.

End Users & Stakeholders

Our primary end users are international students in institutions of higher education in the United States who are non-native English speakers from different cultural backgrounds. During our project's need-finding stage, we conducted interviews with a diverse group of 12 individuals from Brazil, China, Japan, Mongolia and Pakistan, ranging from undergraduates to MBA candidates, each offering unique perspectives and experiences.

Our users also include students from the United States, who will use our service with international students and learn to collaborate with them across their different cultures.

Beyond students, another key stakeholder in the success of our tool are discussion facilitators, who are likely to be educators. This role involves guiding and moderating group discussions, ensuring effective use of the collaborative learning tool in diverse educational settings.

Design Challenge

From our user interviews, we discovered that non-native English speakers in the U.S. frequently face challenges during group discussions with native American students. These students tend to speak rapidly, frequently interrupt, and control the majority of the conversation. Our interviewees unanimously expressed a

struggle with jumping into discussions and a need for a solution that fosters greater awareness and consideration within group settings for these interaction patterns, allowing them to easily contribute as much as they want.

Solution

Our team designed SKY AI, a tool to help monitor metrics during group discussions and encourage participants to be more mindful of their speaking speed, as well as facilitate opportunities for other students to contribute to the conversation. SKY AI not only helps international students navigate cultural differences, but also encourages American and international students to work *together* to have engaging discussions.

The tool is divided into two components – an individual interface accessible on personal devices (phones) for each group member and a collective interface visible to all users on a central device (such as a TV or large projected screen). The individual interface shows tailored alerts to participants that encourage them to speak slower, pause more or speak up more. It also allows participants to “raise their hand” to let others know that they would like to speak up, or turn on a “relax mode” which silences individual alerts and provides participants with the option to focus on listening with fewer distractions. The collective interface shows the real-time data with graphs showing metrics such as words per minute, frequency of pauses, and the breakdown of members’ contributions.

Application of AI

Our tool uses AI to document and display important aspects of the discussion. With speech recognition, it accurately records the conversation and, in real-time, displays the speaking speed (words per minute) for each group member.

The tool draws from features of Bruno, a tool that can record group conversations, distinguish the voices of each participant, and provide real-time transcription.

Ready-to-Use

Our team created a Figma prototype that displays key features of the user interface. This prototype serves as a dynamic visual representation of the design, functionality, and user experience of our project. Users can navigate through the prototype to gain insights into the integration of key elements, ensuring a tangible understanding of the anticipated end product.

Our team has also created a concept video showing how users might interact with the product. The video may be referenced to better understand the interplay between the problem context and the features of our solution.

In-Progress / Next Steps

While our Figma prototype displays the user interface and core features of our project, it is essential to note its current limitations. As of now, the prototype's screens remain static, reflecting a snapshot of the design without the dynamic integration of AI tools.

The next step to further this project would be to begin developing the application and incorporating these AI functionalities. The prototype serves as a foundational visual guide, offering insight into our design principles and anticipated user interactions, recognizing that the complete dynamic functionality will come to fruition in subsequent stages of development.

In the long term, we aspire to add real-time language translation and an anonymous forum for international students to share their struggles to support them with language and psychological barriers.

Ethical Considerations

One primary ethical consideration central to our product design is the fair and unbiased facilitation of group discussions, particularly in light of potential cultural differences between Americans and international students of various backgrounds. We are committed to designing features that ensure our tool does not inadvertently amplify or perpetuate existing disparities in communication styles. By acknowledging and addressing these cultural nuances within group dynamics, our aim is to create an inclusive environment where diverse voices are not only heard but also valued.

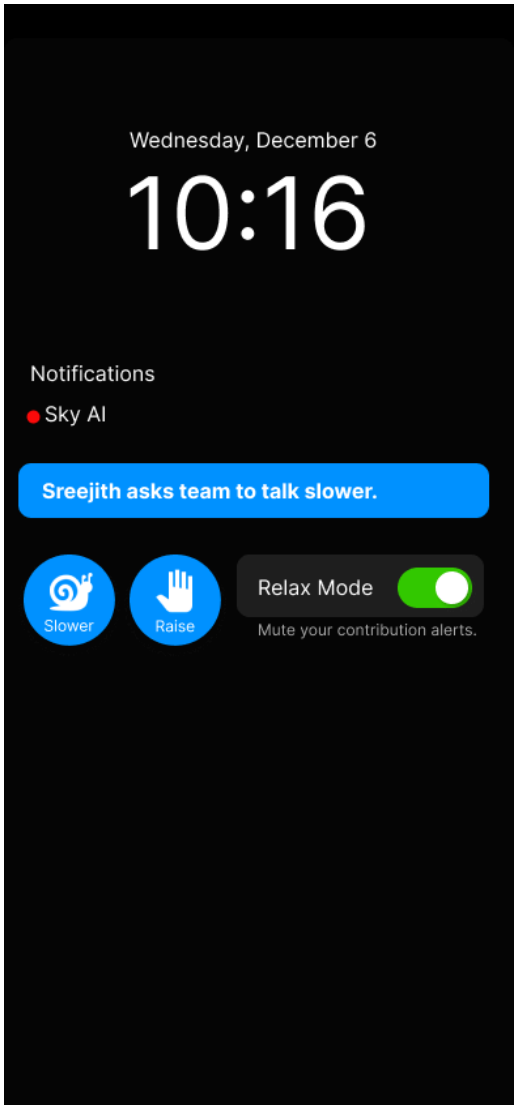
Data privacy remains a paramount concern in our application. As we leverage AI and data analytics, it is critical to implement stringent security protocols to protect user information. We prioritize transparency and user consent, ensuring users have comprehensive insight into the use of their data and confidence in their privacy preservation.

In our strategic planning, we identified two primary use cases. First, transcripts and related feedback will be stored exclusively on the user's device, reinforcing our commitment to not retaining user data on our platform. Secondly, we offer an optional feature for users who wish to track their activity and feedback trends over extended periods. This feature, fully controlled by the user, allows for an opt-in model that aligns with our core principles of user autonomy and data security. By incorporating advanced encryption and regular security audits, we aim to further fortify user data against unauthorized access, ensuring a safe and respectful digital environment.

Usage Examples

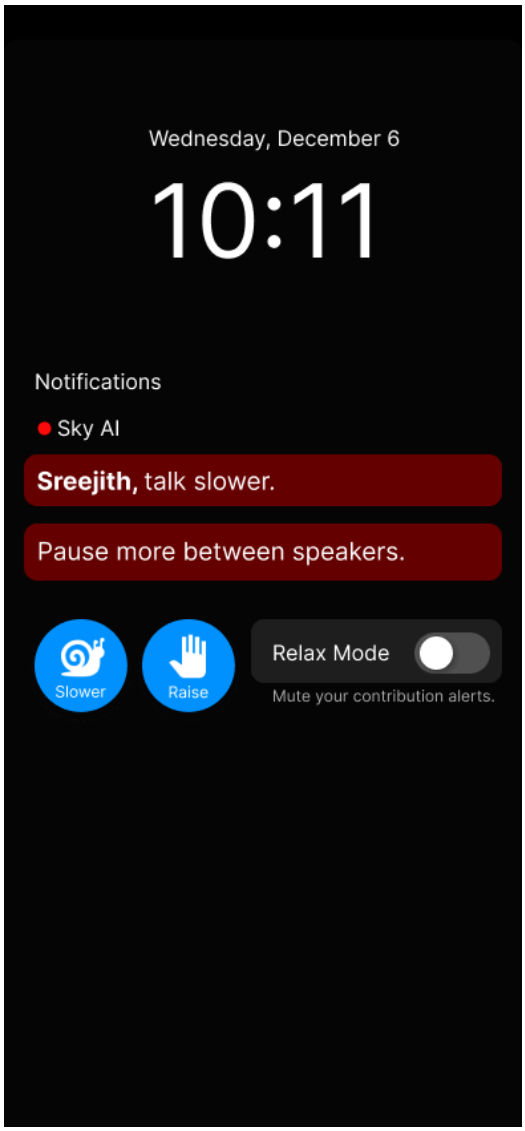
Our concept video may be referenced in order to understand the typical usage of our product. For a more detailed explanation of the features, we can examine the main screens of our prototype.

Individual Screens



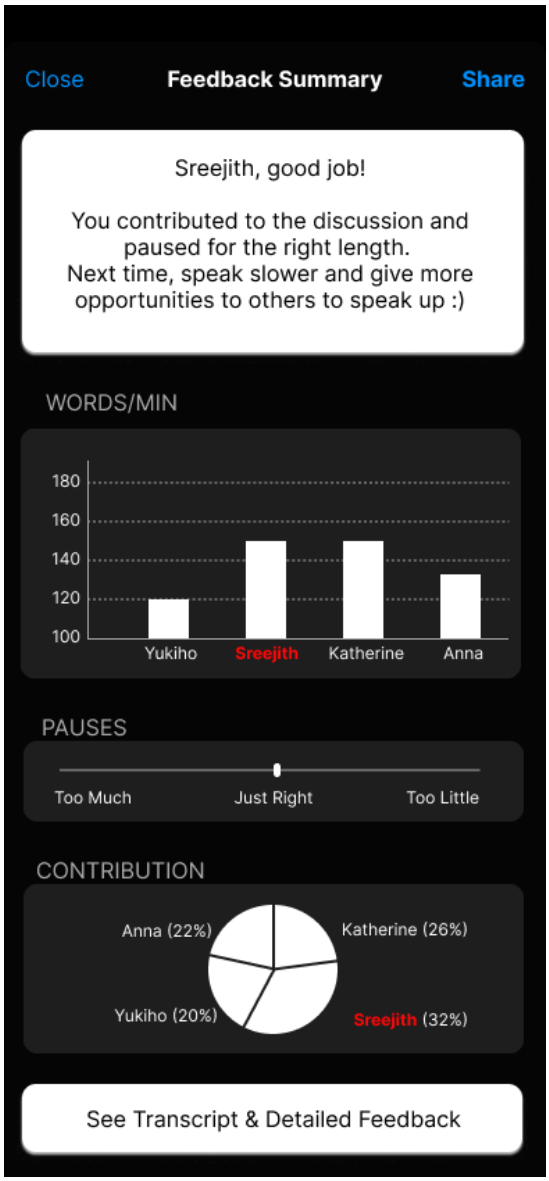
Each participant has their own view of SKY AI on their personal device (phone). Features can be accessed directly from their lockscreen. This eliminates the need for frequent unlocking of their device, ensuring an uninterrupted and focused experience during discussions.

Enabling the "relax mode" ensures users will not be interrupted by notifications encouraging active participation when they prefer to simply listen in on the conversation. However, essential notifications relevant to all participants, such as requests for the team to speak more slowly, will still be received.



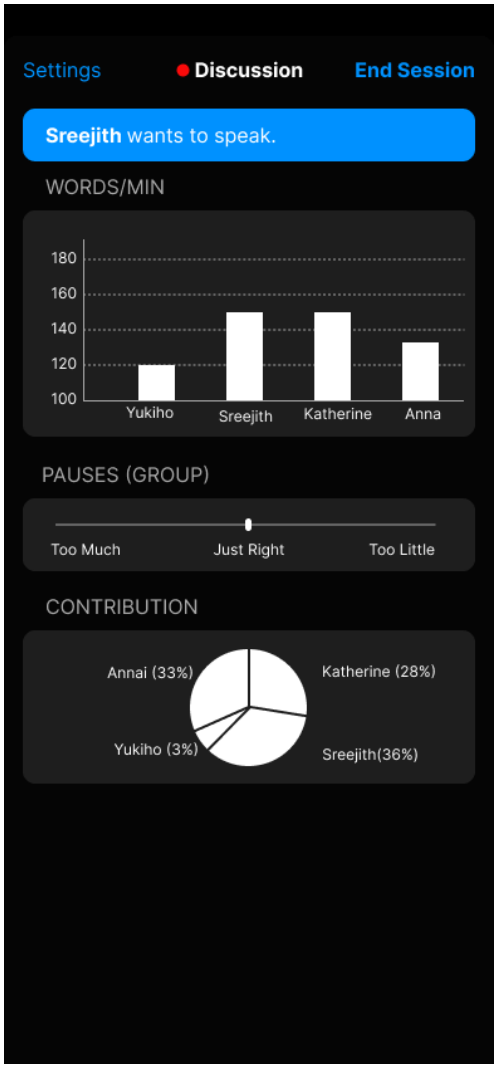
Some notifications are sent to participants individually and are not seen by other group members.

These include notifications asking a specific user to speak more slowly, take more pauses, or make room in the conversation for others. This approach eliminates the need for public "calling out," which could potentially lead to embarrassment or discomfort for the targeted user. By discreetly addressing these aspects, we aim to enhance communication dynamics while fostering a respectful and inclusive environment.



At the end of the discussion, participants can each view a summary of their participation metrics, with specific feedback on what they can improve on, as well as access the transcript of what was discussed.

Collective Screen



A collective screen is to be displayed on a common screen, such as a TV or projector.

The collective screen shows metrics related to the entire group discussion, such as how quickly people are speaking (words per minute), how long/frequent pauses are between speakers, and how much each member is contributing to the conversation.

The collective screen also displays the notifications relevant to the whole group.