



Speech
Bubble

The *next* generation of
language learning and
speech suggestion
wearables

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Overall Problem

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In today's globalized world, we meet people from all over the world, people from many different countries who speak many different languages.





Between accents, colloquial phrases, and slang, it's all too easy to become Lost In Translation.





We aim to tackle the problem of communication difficulties head on.



Research Plan

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Goal

Help people feel more at ease during their conversations by providing them aid along the way

Provide regular, reliable and honest feedback, and help track progress in achieving greater conversational fluency

Our Idea

**A conversational language
support tool.**

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Research Goals



Primary Audience: people trying to improve their conversational English abilities and understand colloquial phrases and terms

Research Approach: Interviews!

Exploring and learning about our **various target groups and participants**, and how they felt about the problem we were trying to address

Better understanding of how non-native English speakers used conversational English in their **everyday lives**, whether that be in the realm of social, or professional, or educational settings.

Professionals who are interested in having a more technical vocabulary and achieving a professional tone in the workplace.

Students who need to incorporate more advanced vocabulary into their academic projects and papers.

Immigrants who have English as a second language.

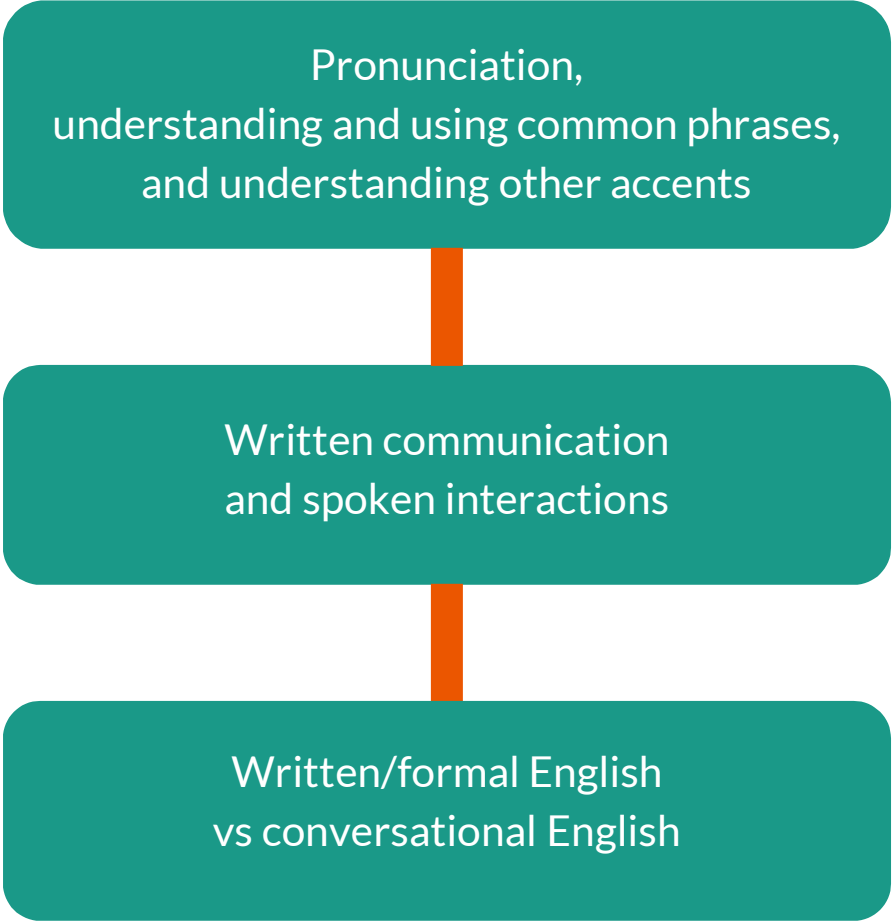
Who We Talked To

We ultimately decided that our stakeholders are generally **non-native English speakers** who want to achieve more fluency and clarity in their English skills.

What We Heard



The main trend that emerged was a demand for immediate feedback that did not interfere with social situations.



Pronunciation,
understanding and using common phrases,
and understanding other accents

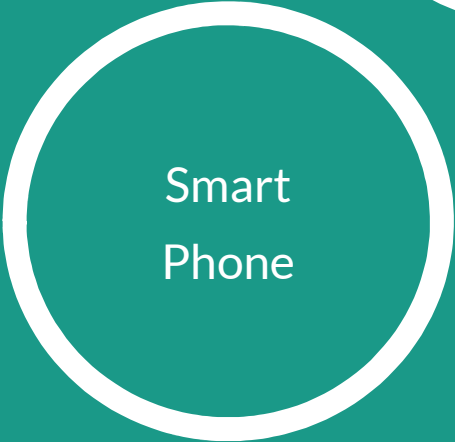
Written communication
and spoken interactions

Written/formal English
vs conversational English



Consistent feedback loop and immediate feedback through the watch interface

Able to detect parts of a conversation that may be poorly phrased or difficult to understand, using our sophisticated natural language processing algorithms



More detailed reports sent to a smartphone or laptop

Trends we saw



Talking around a concept

Understanding quick, slurred, or accented speech

Desire for friendly feedback

Frustration with **finding** a word

Understanding idiomatic phrases

Missing bits of class material or information at a meeting

Anxiety surrounding professionalism in written communications like emails

Tasks

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6 Tasks

Understanding someone with an accent

Slowing down fast speech

Remembering colloquial phrases

Writing a professional email

Recalling a word or term

Editing a paper or professional document

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Assigned to Arielle Menn

Amrutha Gujjar, 10/31/2017

Written task problem space
is already addressed.

Memory for phrases or words used recently
was in high demand.

Working with a live conversation in an
intuitive and non-interruptive way
would be a challenge.

Discussion about Written vs Verbal Tasks, Focus on Verbal: 4 Tasks

We felt more drawn toward these tasks because we felt that help with, and tracking of, verbal colloquial interactions was a much less well-addressed problem space than that of written English.

Designs

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Designs and motivation



Narrowing 6 tasks to 4 tasks for each design was the goal.

Each design had 4 tasks, but not all designs had the same 4 tasks.

Task 1: meeting someone with an accent.

Task 2: Slowing down what somebody is saying so they are easier to understand.

Task 3: Remembering how to use common phrases. Task 4: Writing an email to a boss asking for a raise.

Task 5: Wishing after a conversation that you had known or remembered a word to better describe yourself.

Design 1: Wearable Decorative Earpiece/Conversational learning App.



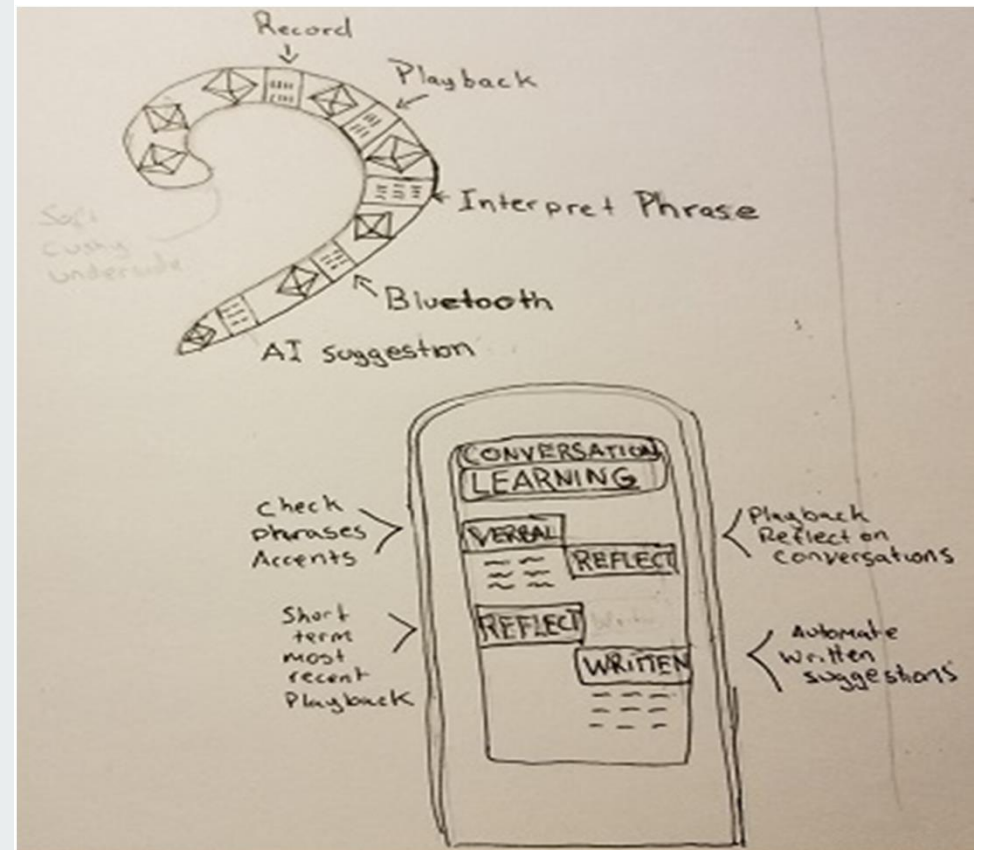
Supports audio recording/playback

Allows for slowing down speech

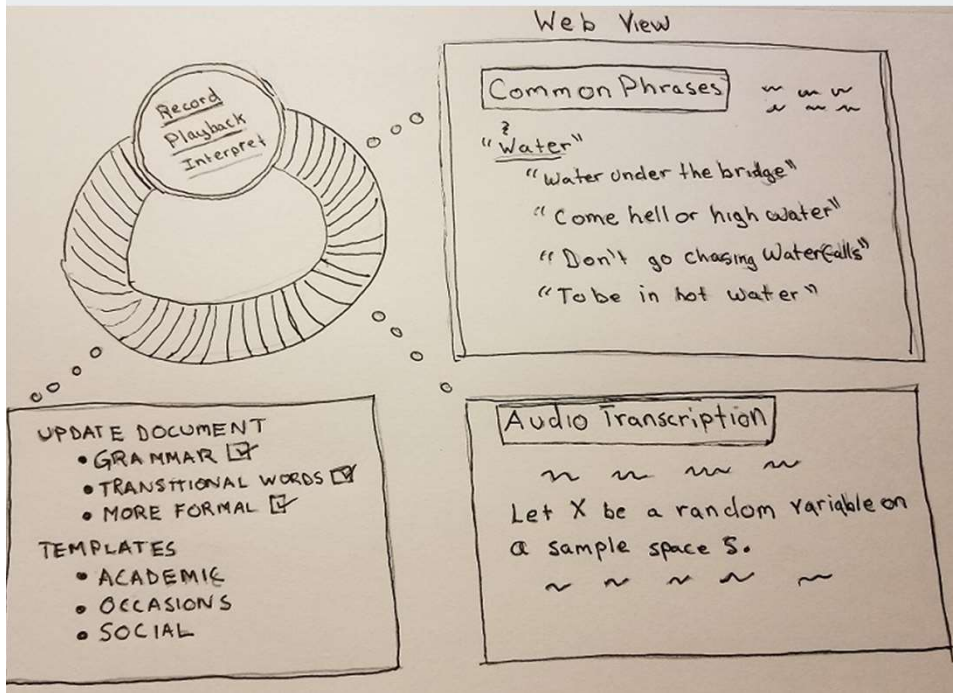
Checking of common phrases

Reflection on prior conversations

Additional application integration



Design 2: Wearable Smart Watch with Conversational learning Application



Smartwatch Adaptation

Similar tasks as design 1.

This one is more accessible and inconspicuous.

Design 3: Web application/Mobile Application

A simple web application/mobile application

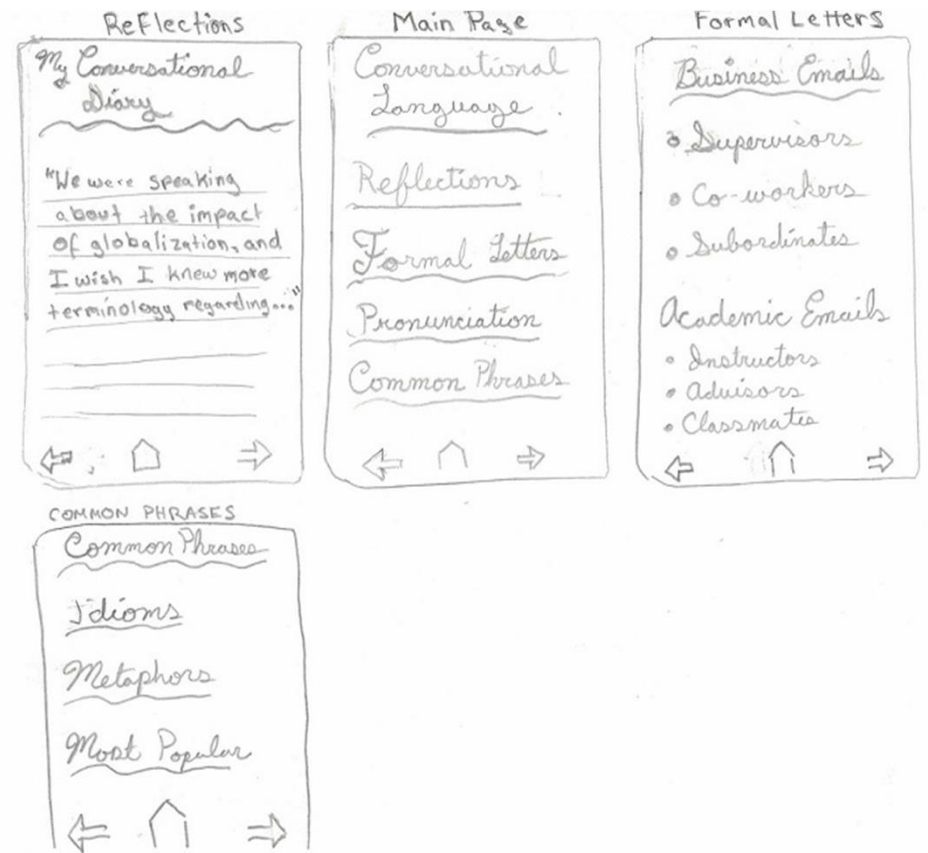
Allows interaction at a leisurely pace.

Reflecting on previous conversations.

Pronunciation support.

Understanding common phrases.

Writing formal letters.



Two Tasks for Main Design



Our research and feedback led us to ultimately center around two tasks:

- 1) **Slowing down speech so it is easier to understand**
- 2) **Remembering how to use common phrases**

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Assigned to Sachin Bharati
Amrutha Gujjar, 10/31/2017

Slowing Down Speech



This task will help people understand rapid speech, a commonly cited challenge.

Focus on instant or queued replay of specific audio bites

Prevents any miscommunication *from* the person based off of misunderstood information

Wanted to give customers peace of mind about their communication to others.

People can self check vocabulary usage and store new words or phrases they'll use again soon.

Remembering the Usage of Common Phrases

This task focuses on clear communication from the person and incorporates a tracking element.

Tasks selected for Design Storyboards

Task 1: Slowing down speech.

Task 2: Remembering common phrases.

During critiques, parsing of conversational data was popular.

Help with, and tracking of, verbal interactions is a much less thoroughly addressed problem space than written English.

Email clients and verbal AI software existed in the problem space already.

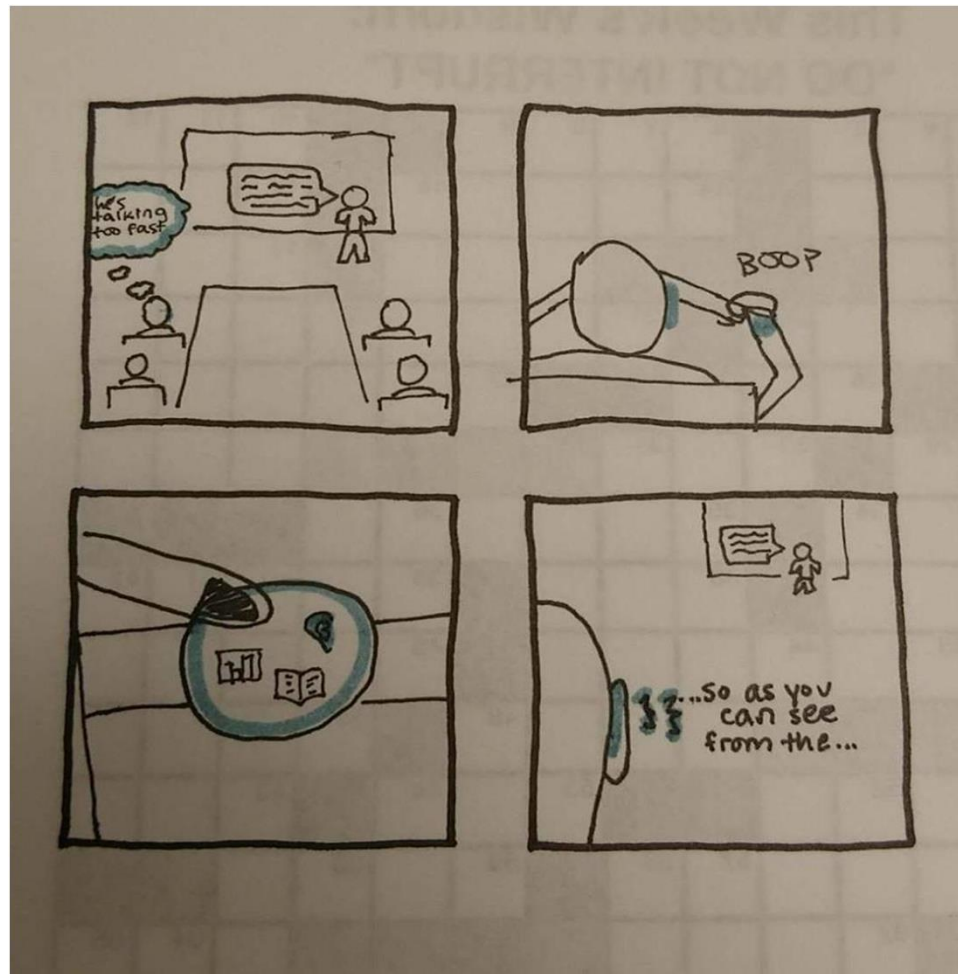
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Assigned to Mary Elizabeth Edwards

Amrutha Gujjar, 10/31/2017



The Speaker was speaking too quickly.

I wish I had a way to replay what they just said...

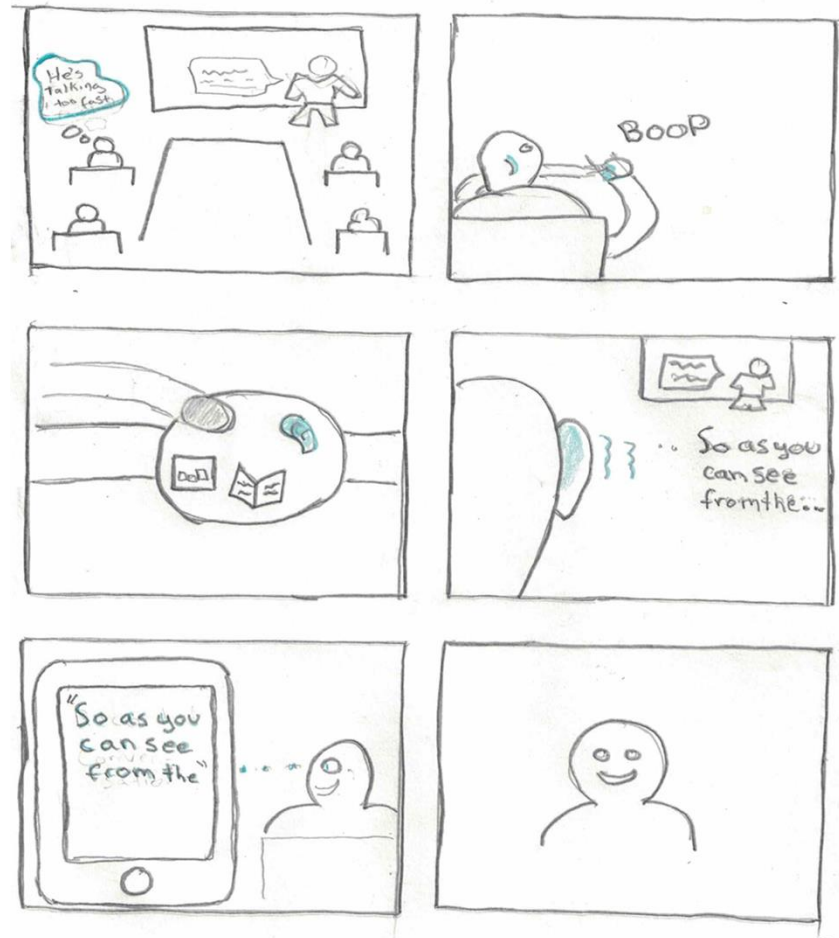
Oh that's right, I do!

Thanks Speech Bubble!

Adds more to earlier storyboard.

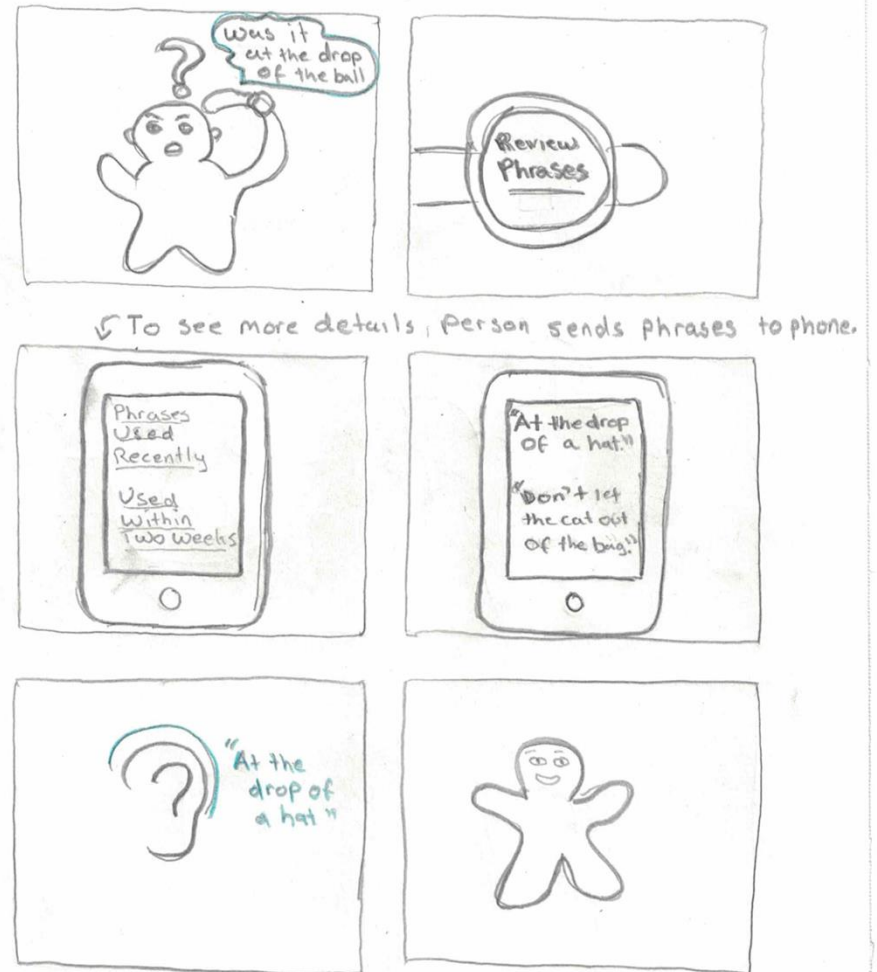
Web Application interface.

Includes increased data storage and access.

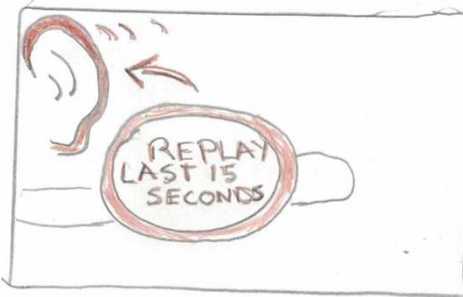
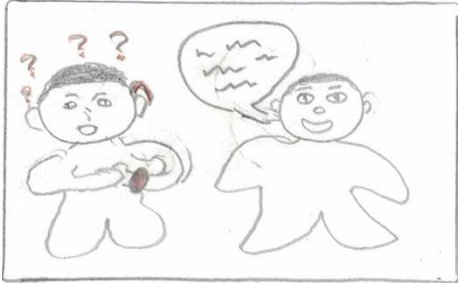


New English Speakers may have difficulties with common phrases.

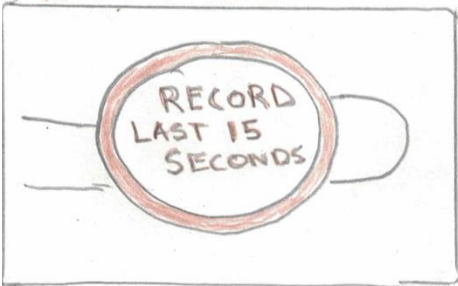
We can remember for them and give reminders.



Does not know what was said!



Records for Review



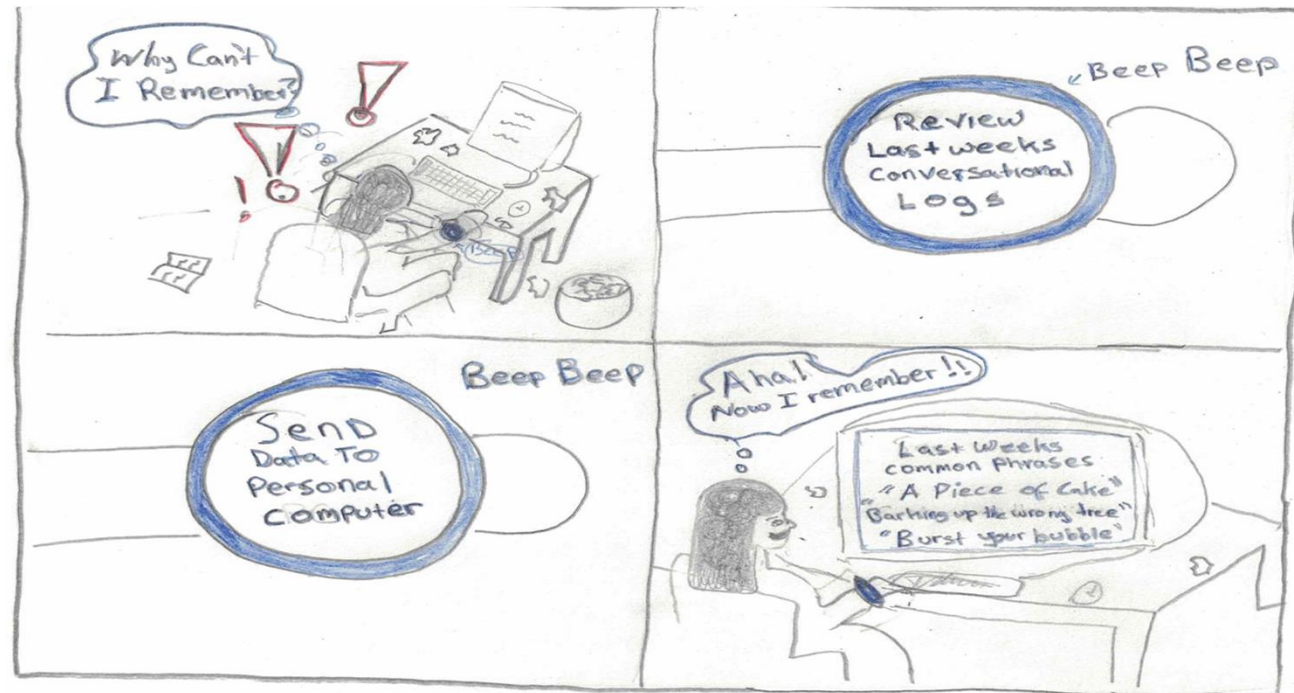
Uses APP for more options



We evolved our storyboard to focus more on the interface rather than the object.

Quick playback access to last 15 seconds, or access of long-term data through an integrated app.

We can support real time social conversations and also logs/prior lookup.



In Short, What We've Learned

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Thank You!

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