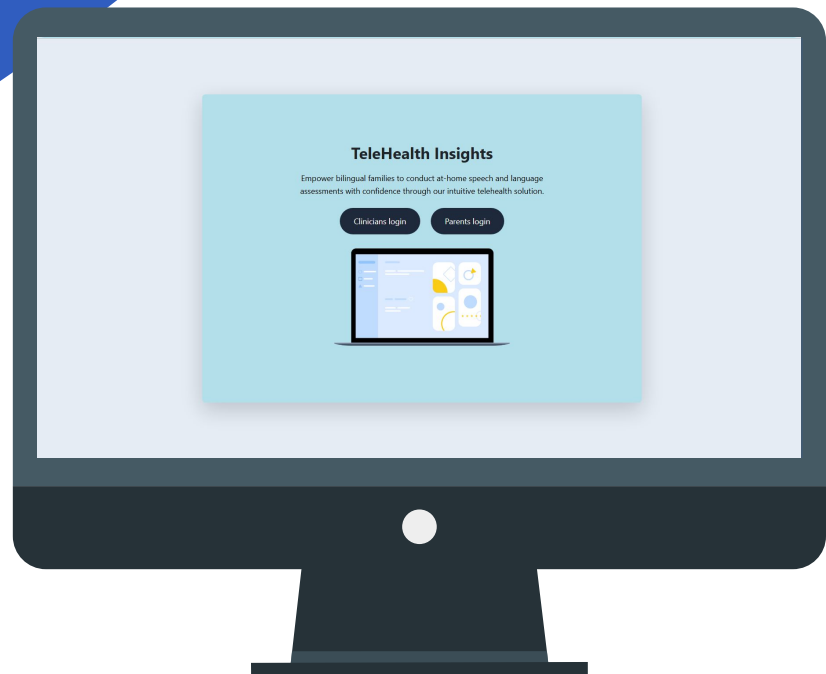


TeleHealth Insights

Team 22

Supervisor: Dr. Irene Ye Yuan



TeleHealth Insight Team



**Parisha
Nizam**



**Promish
Kandel**



**Mitchell
Weingust**



**Jasmine
Sun-Hu**

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Project Overview

Project Overview

At-Home Bilingual Language Assessment Tool

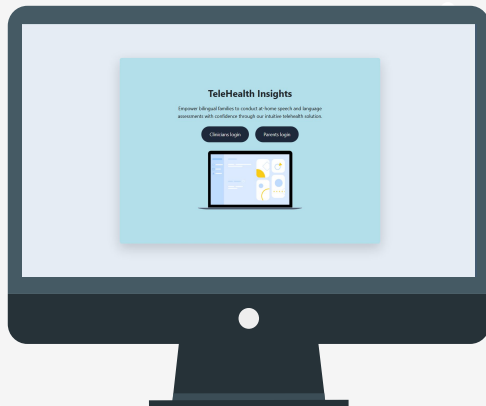
Children with speech difficulties need regular assessments to monitor progress and adjust therapy. Parents can help administer assessments **at home**, but current tools are designed for in-person Speech Language Pathologists use and don't meet parents' needs.

Project Overview

At-Home Bilingual Language Assessment Tool

Initial MERLS site

- Poor UI & Usability
- No system to organize/view results
- Had to still conduct assessments with a clinician to monitor



New TeleHealth Site

- Clear instructions and guidance
- Child-friendly interaction
- Secure and structured data capture for Speech Language Pathologists



Goals

Goals



Intuitive Parent Interface

Provide ease of navigation and set up



Engaging Child Interface

Design a simple and interactive platform for children of all ages



Reliable Clinician Dashboard

Provide valuable results and bias detection in an easy to consume format



Data Security

Securely store and retrieve data



Demo



Application Journey

Journey

Initial Design

**Usability Testing
Round 1**

Revision 1



Revision 0

**Usability Testing
Round 2**



Parents Interface

Tutorials

What was the most difficult part of using the platform?

5 responses

The tutorial had an image that I thought was real and I tried clicking it and it didn't work and I got confused

Tutorials

Were there any aspects of the platform that you found unnecessary? Why?

5 responses

I didn't find any of the aspects unnecessary.

No

N/A

I thought that the tutorial was almost the same as the instructions shown before the real assessment was done, so perhaps it does not need to be included or more detailed information can be given that is not shown in the real assessment

nope

Tutorials

Test Selection Tutorial

To begin the assessment, you will be prompted to select your language and test type, which was provided by your clinician via email.

Test Selection

Select Test Language

Select a language ▾

Select Test Type

Select a test type ▾

Next

Available Options

Language Type: English, Mandarin

Test Type: Matching, Repetition, Quantifiers

Next →

Media Testing Tutorial

Consent Form

During the assessment, you will be required to review and complete a consent form.

This ensures you understand how your data will be used. Please read the provided information carefully when prompted.

Recording Consent

We kindly ask for your consent to record video and audio. This recording may be used for analyzing responses and ensuring the quality of the assessment. Your data will be handled securely, only viewable by your clinician and used solely for the purpose outlined above.

Do you consent to the recording of video and audio for this assessment?

I consent

I do not consent

After completing the consent form during the assessment, you will be guided to configure your video, audio, and microphone devices.

This step ensures that all devices are working correctly before you proceed.

Submissions

Did you encounter any bugs/problems while using the platform? If so, what were they?

5 responses

I encountered long load times in between pages.

After submitting there was no indication where I was at in the submission process while it was being conducted besides the submission loading. When trying to listen to the audios some were very quiet.

What was your least favourite part of the experience? Why?

5 responses

The submission screen took a bit long to load after I finished the assessment

Submissions



Submit

Submitting Answers...



Submit



Submitting Answers...

Home Page

What was your least favourite part of the experience? Why?

5 responses

Not knowing that the tutorial was below the start button as the screen size was zoomed in.

Home Page

TeleHealth Insights

Welcome to our TeleHealth platform, designed to help parents actively support their child's speech therapy journey. Our easy-to-use tools provide engaging assessments allowing you to work alongside speech-language professionals from the comfort of your own home.

Start

Not sure how to use the platform? We've got you covered! To guide you through all the features and help you make the most of your experience.

Tutorial →

Home Page

 [Home](#)

 [Logout](#)

Welcome, Mitchell Gupta!

TeleHealth **Insights**

Welcome to our TeleHealth platform, designed to help parents actively support their child's speech therapy journey. Our easy-to-use tools provide engaging assessments, allowing you to work alongside speech-language professionals from the comfort of your own home.

[Start Assessment](#)

[View Results](#)

Not sure how to use the platform?

We've got you covered! To guide you through all the features and help you make the most of your experience.

[Tutorials](#)



Repetition Assessments

Which part of the platform needs the most improvement? Why?

5 responses

UI - some actions/next steps were unclear. sometimes i didn't know what i was supposed to do to progress.

Repetition Assessments



Play Audio First

Next



Start Recording

Next



Stop Recording

Next



Audio Recording Complete!

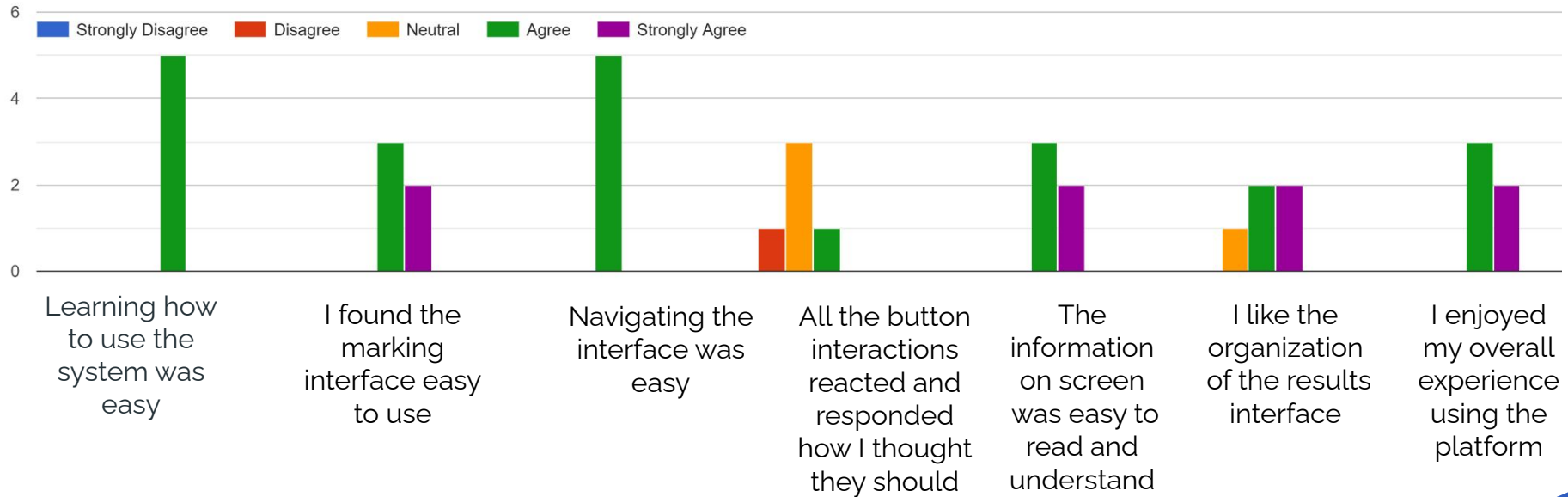
Next



Usability Test Results

Feedback

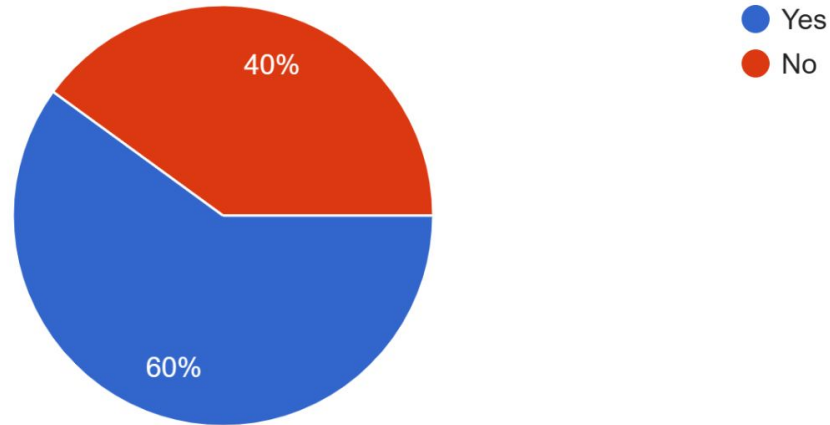
Please select the statement that best describes your experience for each of the following:




Scaling

Did the screen's visuals scale appropriately to the screen size?


5 responses




Scaling

 [Home](#)

Repetition Assessment


 [Logout](#)

- 1 Press the  button to **Play** the Question Audio
- 2 The  button can only be pressed **2 times**
- 3 After the audio finishes, press: **Start Recording** to record your answer.
- 4 When you're done speaking, press: **Stop Recording**.
- 5 Press **Next** to save your answer and go to the **next question**
- 6 Press **Submit** to complete the test






Are you
ready to
begin?

Let's Go!

 [Home](#)

Repetition Assessment

 [Logout](#)

- 1 Press the  button to **Play** the Question Audio
- 2 The  button can only be pressed **2 times**
- 3 After the audio finishes, press: **Start Recording** to record your answer.
- 4 When you're done speaking, press: **Stop Recording**.
- 5 Press **Next** to save your answer and go to the **next question**
- 6 Press **Submit** to complete the test

The first question of each test is a **Practice Question**. This will not impact your results



Are you ready to
begin?

Let's Go!

Favourites

What was your favourite part of the experience? Why?

5 responses

The matching assessment, cause it worked very smoothly and was easy to understand.

The additional tutorial to learn about the website before jumping into a test, that way I knew the testing would be set up correctly

Performing the matching tests was easy to use and enjoyable for its simplicity.

I liked the images and graphics they were visually appealing

Matching photos with the audio was very fun



Clinicians Interface

Add New Client

What would you like changed to make the platform easier to use?

5 responses

Some reminder instructions would be nice like "Please give this client ID to parents for their login"

Add New Client

Client Number Generated

Security Code (Client Number): RVUW7Y ⓘ

Client Number

Security Code (Client Number): RVUW7Y ⓘ

**This client number is auto-generated.
Please note this code and provide it to the
client to create an account.**

Dashboard

What was your favourite part of the experience? Why?

5 responses

The graphs and the test result page was very easy to read and understand.

It is easy to use the website, and the UI is very appealing to the eye.

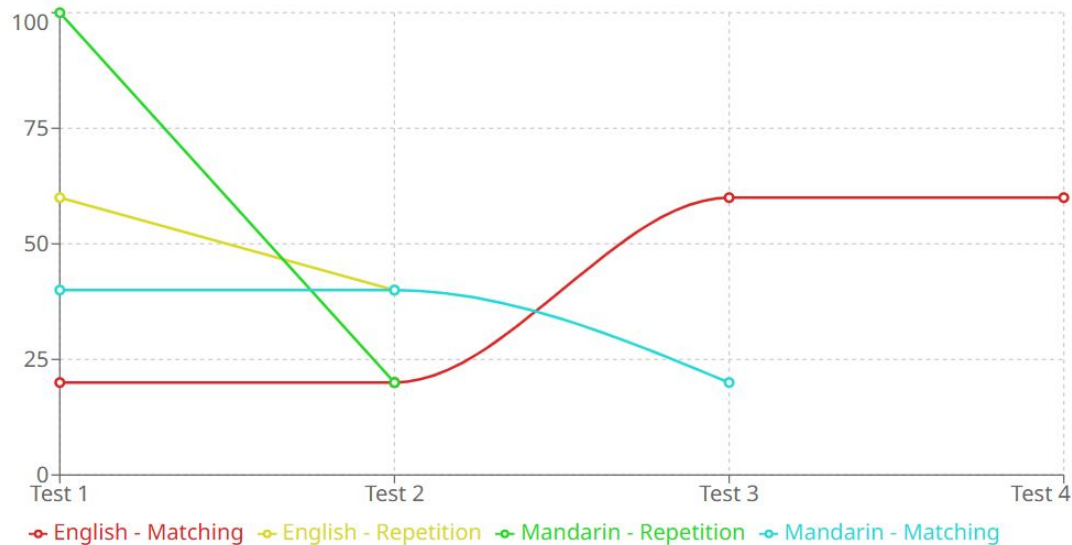
I like reviewing the graph of the tests taken over time for a given client- it was nice to see trends in grades with respect to specific tests

Dashboard

Client Details

Security Code: F6JWDL

Graph



Dashboard

Security Code: F6JWDL

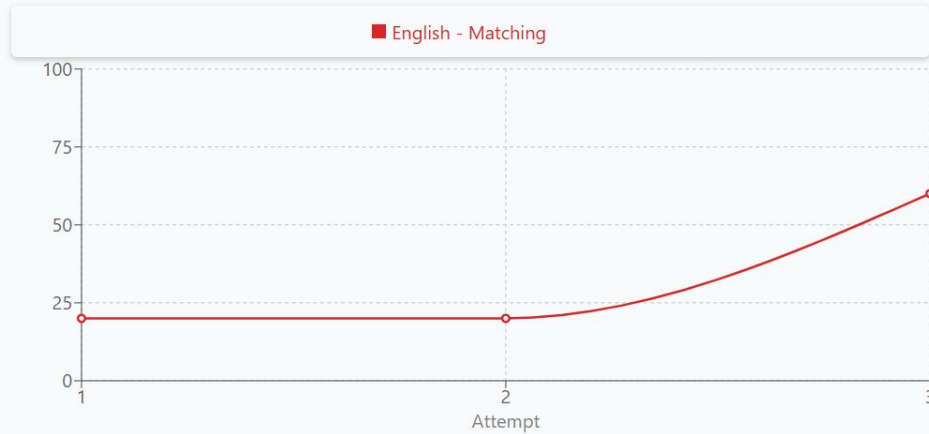
Select a filter ▾

English ×

Matching ×

Clear Filters

Trends



Assessment Results

20%

English - Matching

Monday, February 10, 2025



20%

English - Matching

Monday, February 10, 2025



60%

English - Matching

Monday, February 10, 2025



Bias Review

What would you like changed to make the platform easier to use?

5 responses

Adding a bias note so that the clinician is able to add their own bias that they discover.

Which part of the platform needs the most improvement? Why?

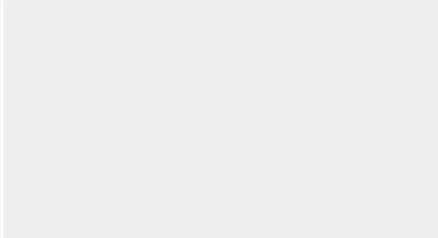
5 responses

If i had to choose maybe the page to page navigation, using the home button sometimes is inconvenient when you don't want to head back to the home page.


Bias Review

Bias Detected


Question timestamp: 00:00




0:00


Question ID: 1 

User Answer






A


B

Correct Answer: B

Hide Bias List 

Bias Detected:

-  3.65s - choose (Faces Detected: 2)
-  5.22s - one (Faces Detected: 2)
-  8.52s - this (Faces Detected: 2)
-  10.09s - one (Faces Detected: 2)

Save Changes

Bias Review

[Return to Results](#)[Back](#)[Next](#)

Question ID: 1 

Selected Answer



A



B

Correct Answer: B

Bias Detected

00:03 - choose (Faces Detected: 2)

00:05 - one (Faces Detected: 2)

Clinician Notes (All Notes Autosaved)

Noticed parent assisting child at 3s!

[Remove Bias](#)

Bias Review - Repetition Assessments

What was your favourite part of the experience? Why?

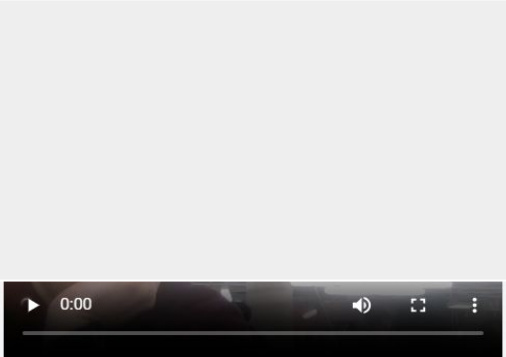
5 responses

I like the idea of having a video snippet available showing the client when responding to the matching and the repetition sections. I also think it is great that the clinician can score the response for the repetition, clicking on the checkmark, etc.


Bias Review - Repetition Assessments

Question 1




English - Repetition



0:00

Question ID: 1 

Select a button to grade the question



No Bias Detected

Save Changes

Add Bias

Bias Review - Repetition Assessments

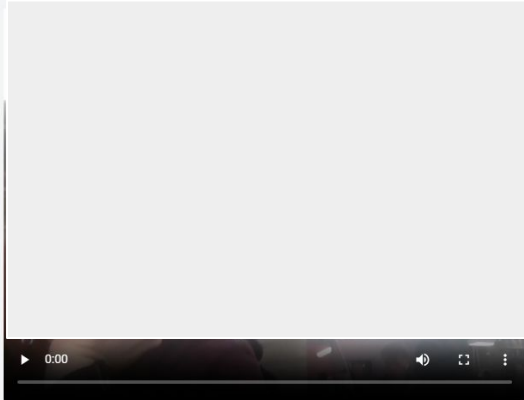
English - Repetition
Monday, February 10, 2025

Return to Results

Back

Next

Question Start: 00:00



Question ID: 1 

Submitted Answer

▶ 0:00 / 0:00  

Mark Answer



No Bias Detected

Clinician Notes (All Notes Autosaved)

Enter notes here...

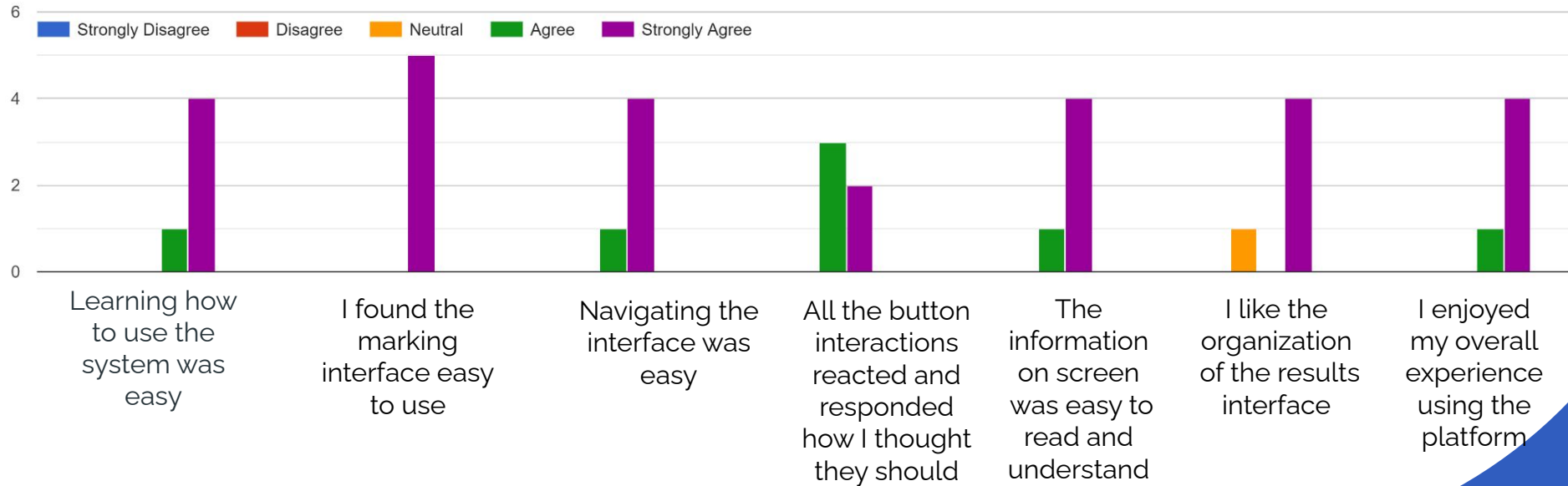
Add Bias



Usability Test Results

Feedback

Please select the statement that best describes your experience for each of the following:



Feedback

Did you encounter any bugs/problems while using the platform? If so, what were they?

4 responses

I didn't encounter any difficulties. Everything seemed to work well.

N/A

No

Feedback

What was your least favourite part of the experience? Why?

4 responses

I don't have a "least favorite" part. I'm thrilled with the capability the platform will have!

I don't have any part that i would consider my least favorite part. I found all sections to be equally enjoyable.

Feedback

Were there any aspects of the platform that you found unnecessary? Why?

5 responses

No. Everything seemed appropriate and useful for clinical review.

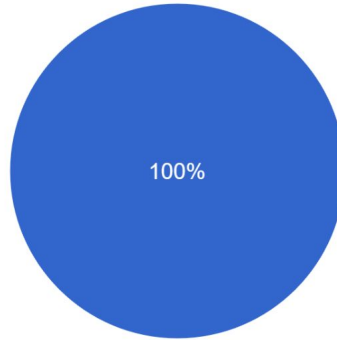
I didn't find any part to be unnecessary.

No, I found that everything included played a role in the seamless process of reviewing scores

Scaling

Did the screen's visuals scale appropriately to the screen size?

5 responses



● Yes
● No

Additional Feedback

Do you have any additional feedback?

3 responses

I'm excited for clinicians to have access to the application and the information it provides! The visual presentation was both appealing and easy to read/understand. The graph will be extremely helpful when viewing results. Very well done!



Design Decisions

Decoupling Frontend and Backend

Asynchronous Processing

The frontend hands off video processing to the backend

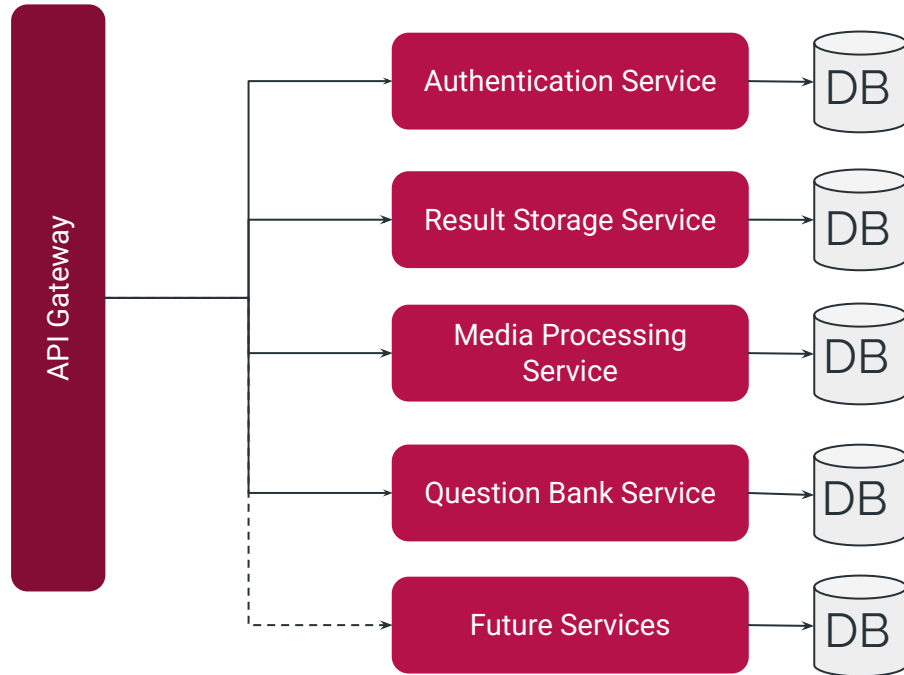
Enhanced User Experience

This design minimizes waiting times for users, providing a smoother and more efficient overall experience.

Improved Reliability

Backend failure didn't hinder users from navigating between tests

Microservice Architecture



- **Separation of concern**
 - Adding or removing a service, doesn't affect other services
- **Easy to maintain**
 - An issue in one service remains contained, preventing it from disrupting the entire application.
- **Faster Iterations**
 - Can develop each service in parallel, which helped with fast paced development

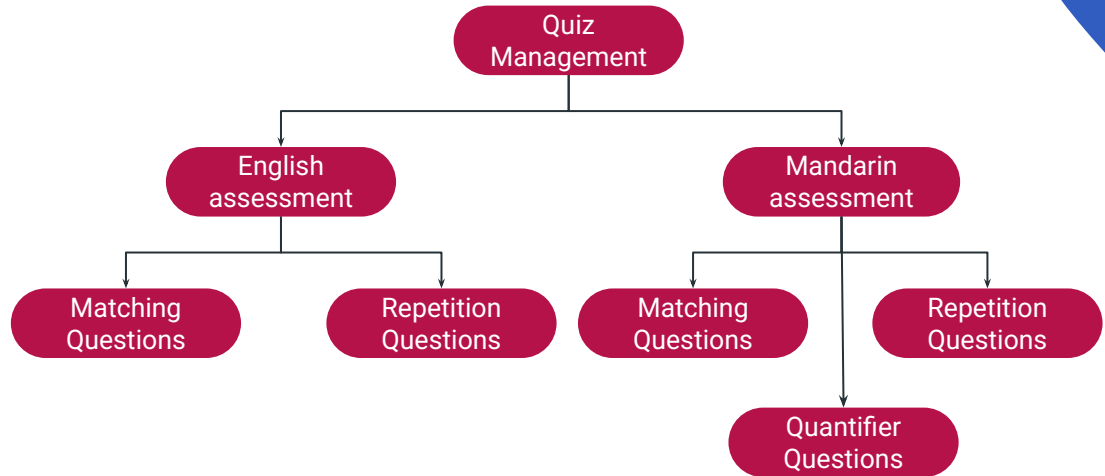
Factory Pattern for Quiz Management

Scalability

- Easy to add new test types or a whole new language category
- Adding quantifier questions as a new test type took 30 mins

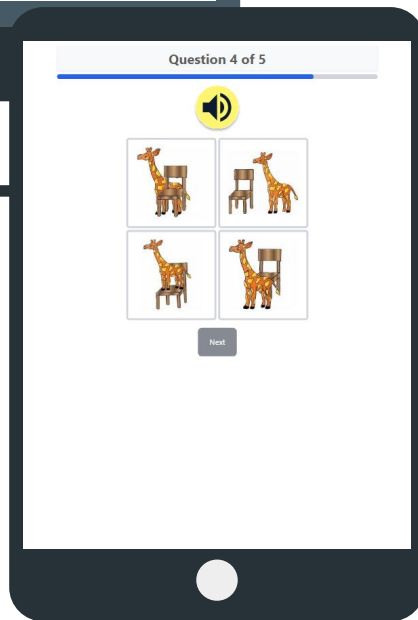
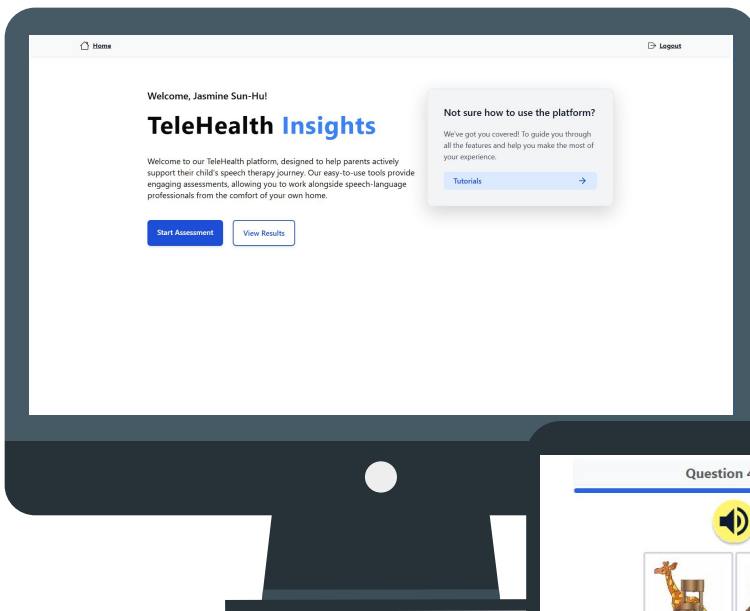
Maintainable

- A fault in one test type won't affect other types
- All questions in each type are independent of each other



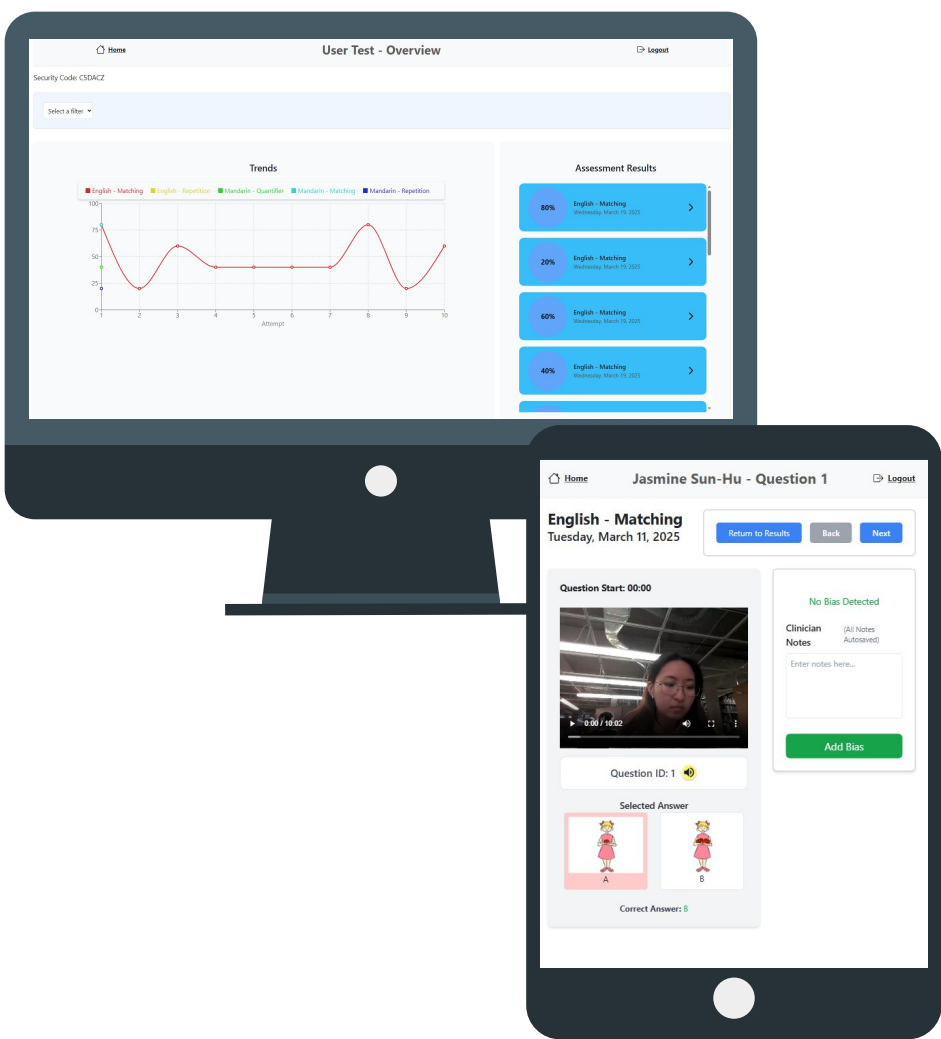


Usability Decisions



Appearance (Parents & Children)

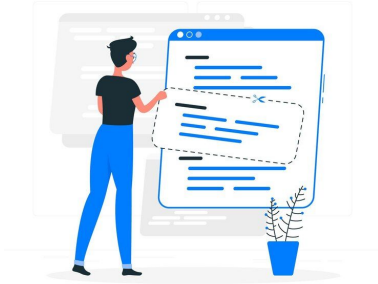
- Minimalistic design with bright, calm colours and age appropriate illustrations
- High contrast visuals and large touch targets
- Cross-platform compatibility for desktop and tablets



Appearance (Clinicians)

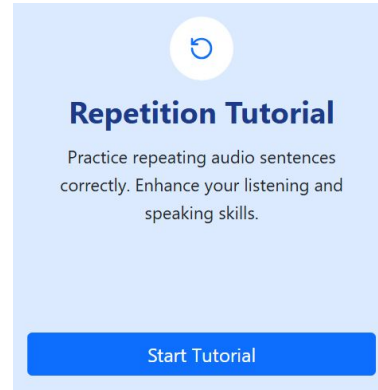
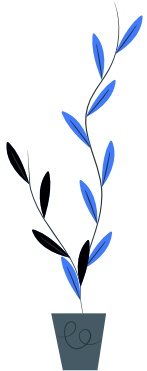
- Cross-platform compatibility for desktop and tablet
- Comprehensive report with visual grouping
- Top-down navigation flow

Ease of Learning / Understandability



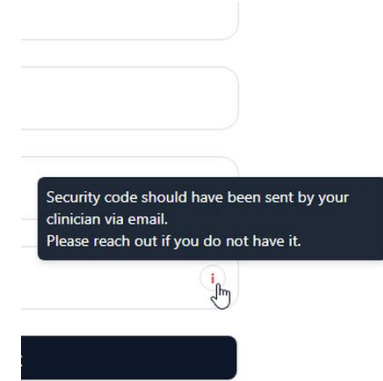
No Technical Jargon

For parents and clinicians to easily understand the platform



Guided Tutorials

So children can complete assessments smoothly

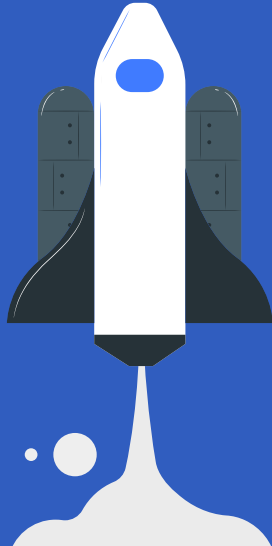


Additional Tooltips

To minimize any points of confusion for both parents and clinicians



Performance Metrics



Security Requirements



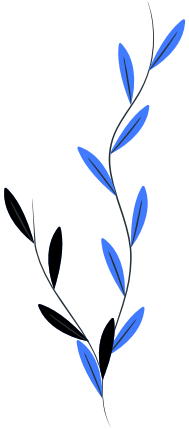
Encryption

Data is encrypted in transit and at rest using industry standard encryption algorithms (TLS 1.2, AES-256)

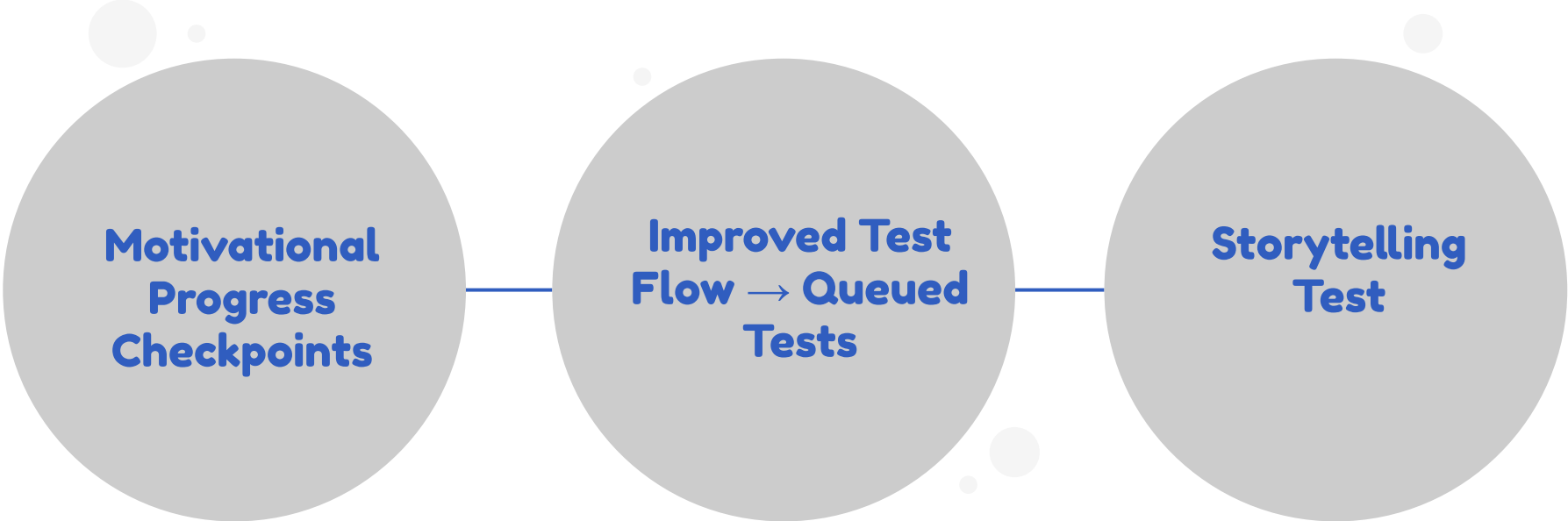


RBAC

Role Based Access Control ensures only authorized users can access specific parts of the system



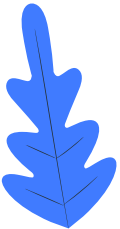
Future Goals



**Motivational
Progress
Checkpoints**

**Improved Test
Flow → Queued
Tests**

**Storytelling
Test**





Questions