Engage SLT

From Challenge to Solution

Science Foundation Ireland Challenge Fund

- Address important societal challenges

- Concept phase – identify what the challenges are in a particular field

- Seed phase – develop a prototype piece of technology to address some of the needs identified in the concept phase.

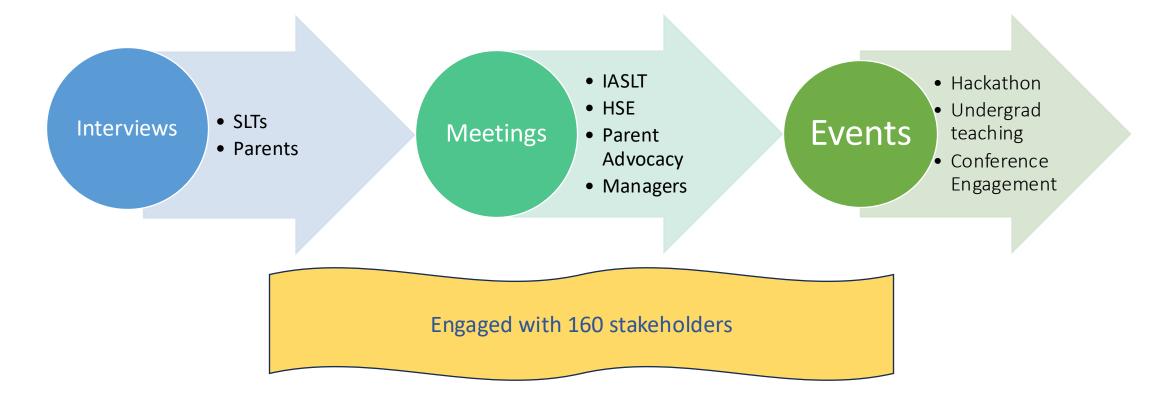- Competing for a further €1.5 million worth of funding

How can we use technology/AI to enhance service delivery in speech and language therapy?
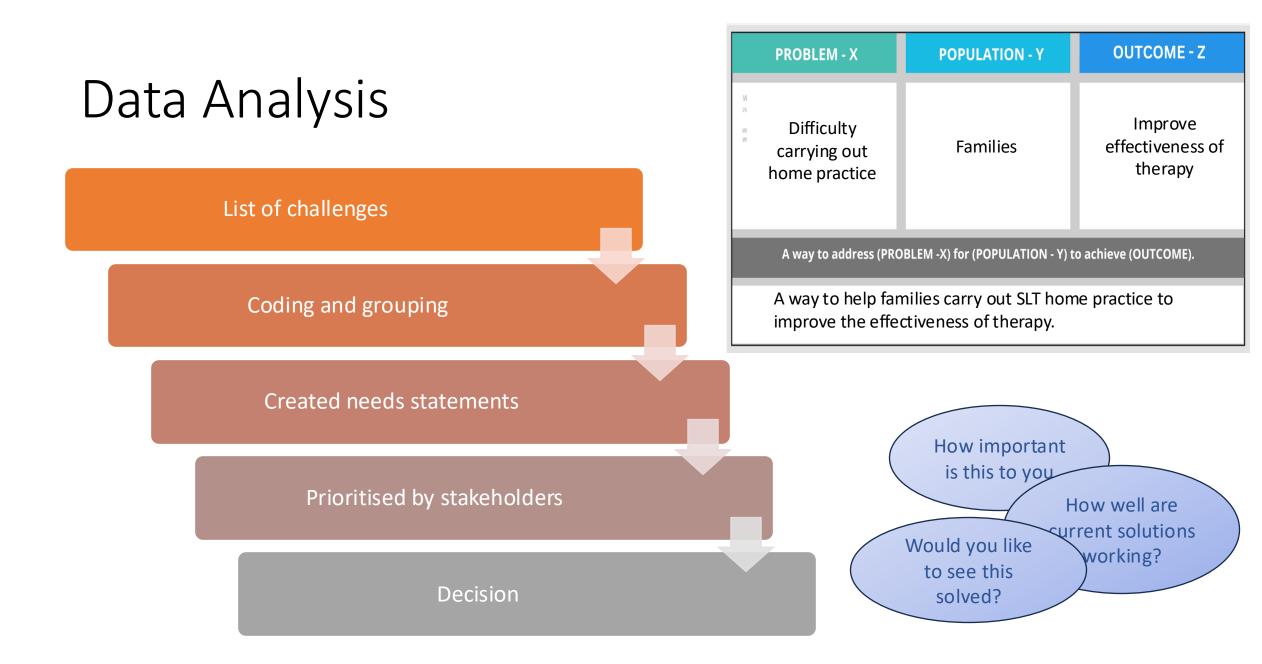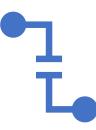
Concept Phase: Stakeholder Engagement

Important to understand perspectives of those involved in the service to know the challenges, desired improvements, and feasibility of a technology solution

Interviews
- SLTs
- Parents

Meetings
- IASLT
- HSE
- Parent Advocacy
- Managers

Events
- Hackathon
- Undergrad teaching
- Conference Engagement

Engaged with 160 stakeholders

Data Analysis

PROBLEM - X	POPULATION - Y	OUTCOME - Z
Difficulty carrying out home practice	Families	Improve effectiveness of therapy

A way to address (PROBLEM -X) for (POPULATION - Y) to achieve (OUTCOME).

A way to help families carry out SLT home practice to improve the effectiveness of therapy.

- List of challenges
- Coding and grouping
- Created needs statements
- Prioritised by stakeholders
- Decision

How important is this to you

How well are current solutions working?

Would you like to see this solved?

Identified Need for Technology

Disconnect between SLTs and parents outside the clinic.

"You get the support but then are expected to follow up for months after with no support. Ideas slip out of your head and you forget the correct way to carry out homework."
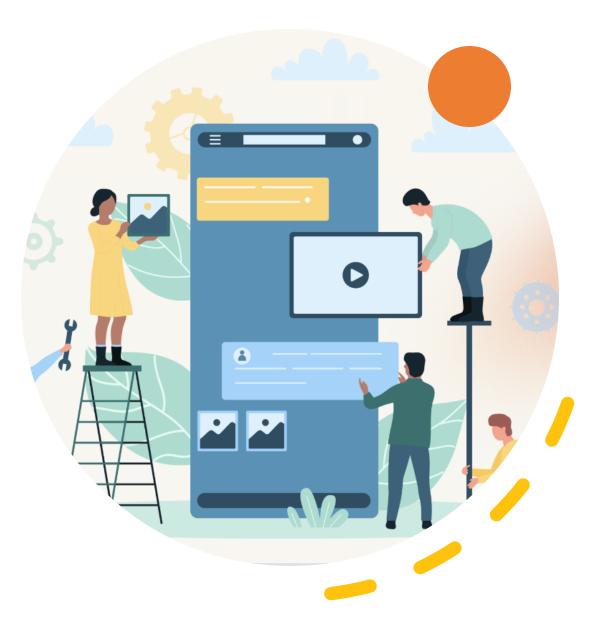
Technology can address the following needs identified:

- Meaningful communication between parent and SLT

- Support families to carry out home practice

- Monitor the child's progress

Seed Phase: Prototype Development

- Prototype mobile and web app

- Co-design and refinement study in primary school in Dublin.

- 8 children receiving short intervention block

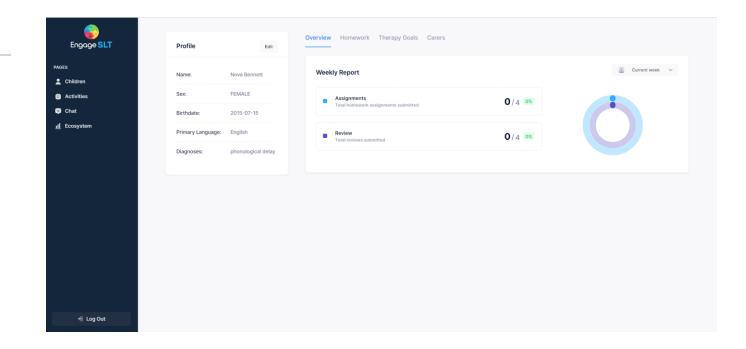- Parents using the app and will provide feedback

The Challenge

- **High Workload for SLTs**
  - Labor-intensive material creation
  - Duplication across

- **Limited Monitoring and Adaptation**
  - Long intervals between sessions
  - Difficulty tracking progress

The Solution

- **Child Profile Management**
  - All information such as assigned homework, progress, and therapy goals are gathered in one place.

The Solution
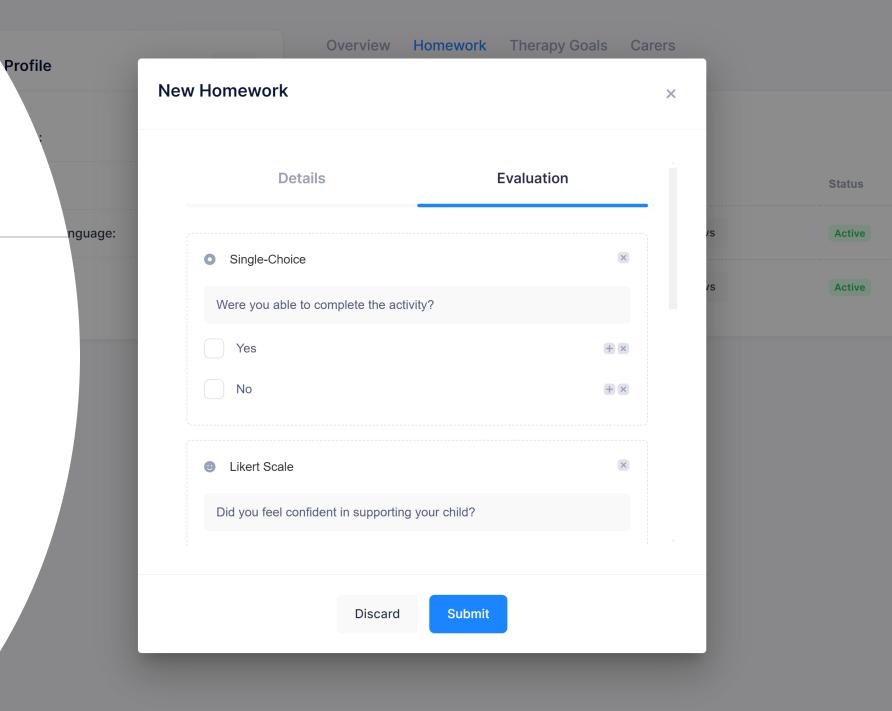
- **Personal Homework Library**
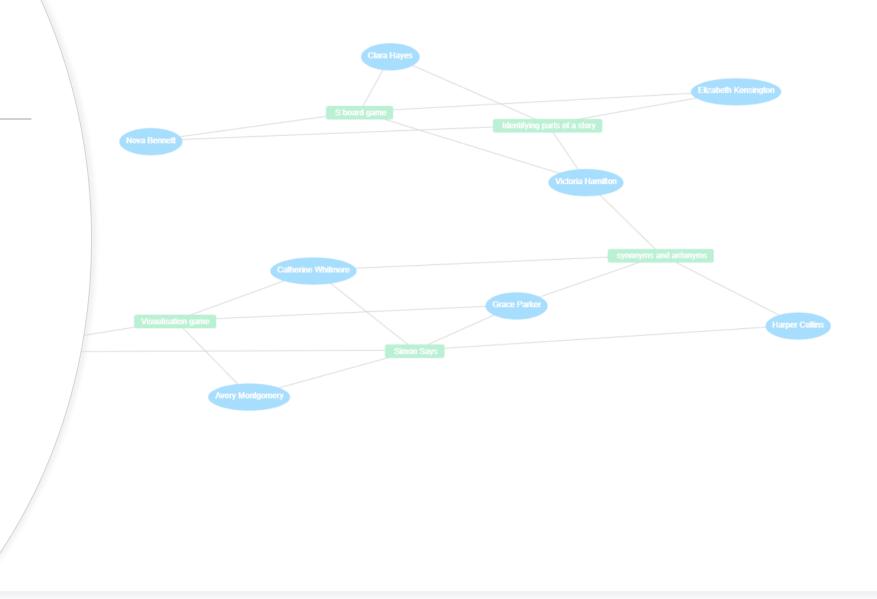 - Makes the homework management process more structured and easier for therapists

The Solution

- **Feedback System**
  - Allows therapists to adapt therapy in real time based on the feedback received

Profile

New Homework   ✕

Details   Evaluation

◉ Single-Choice   ✕

Were you able to complete the activity?

☐ Yes   ＋ ✕

☐ No   ＋ ✕

☺ Likert Scale   ✕

Did you feel confident in supporting your child?

Discard   Submit

The Solution

- **Ecosystem Report**
  - Allows therapists to identify effective homework based on feedback

Future Plans

- **Build National Repository**
  - Share and use ready-made material

- **Incorporate generative AI**
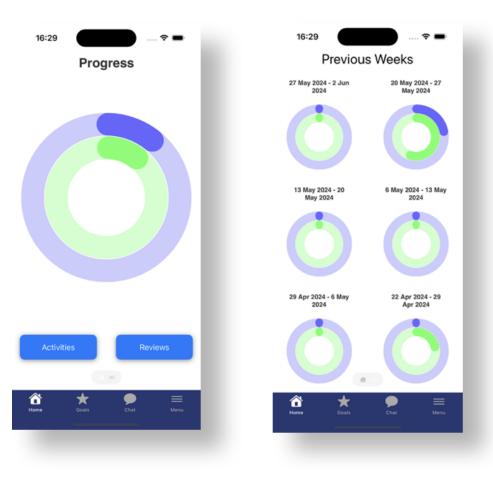 - Delegate routine tasks to artificial intelligence
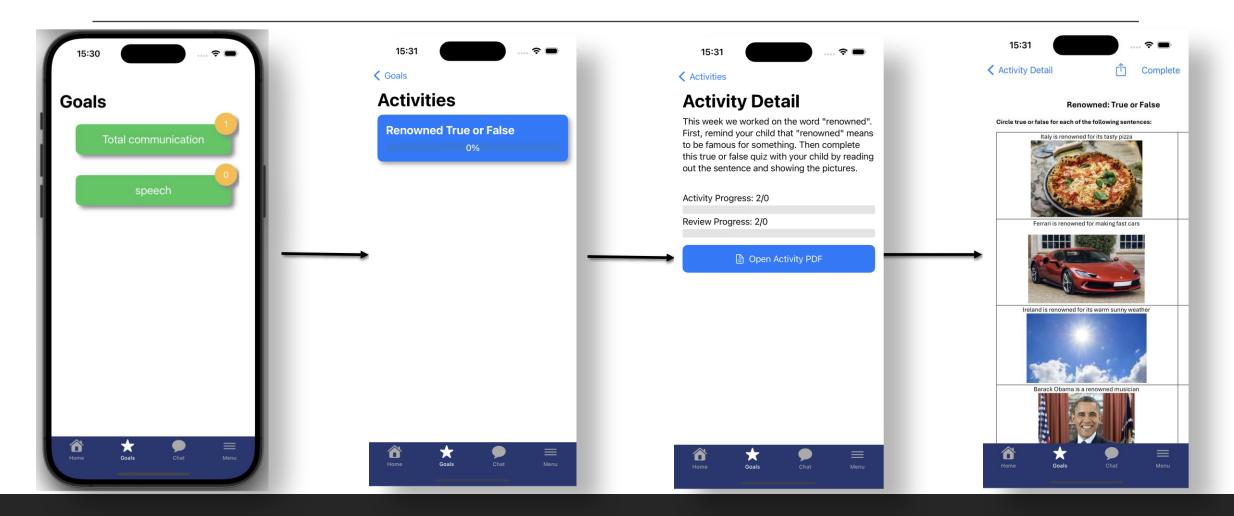
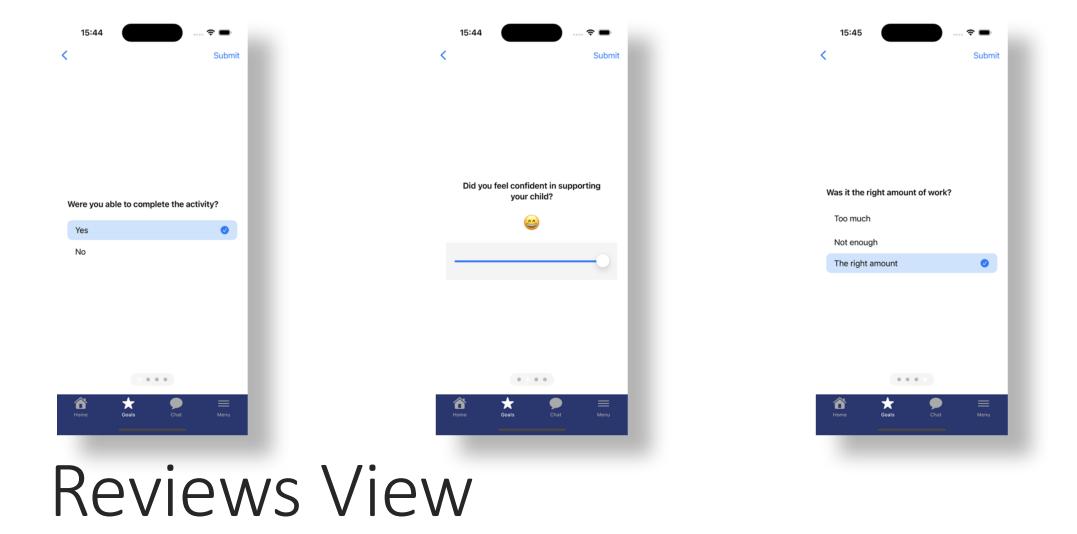# Mobile Development

EMRE KAVAK

FULL STACK DEVELOPER

- Shows assignments and reviews for the current week

- Helps users stay on track with therapeutic goals

Landing and Home View

Activities View
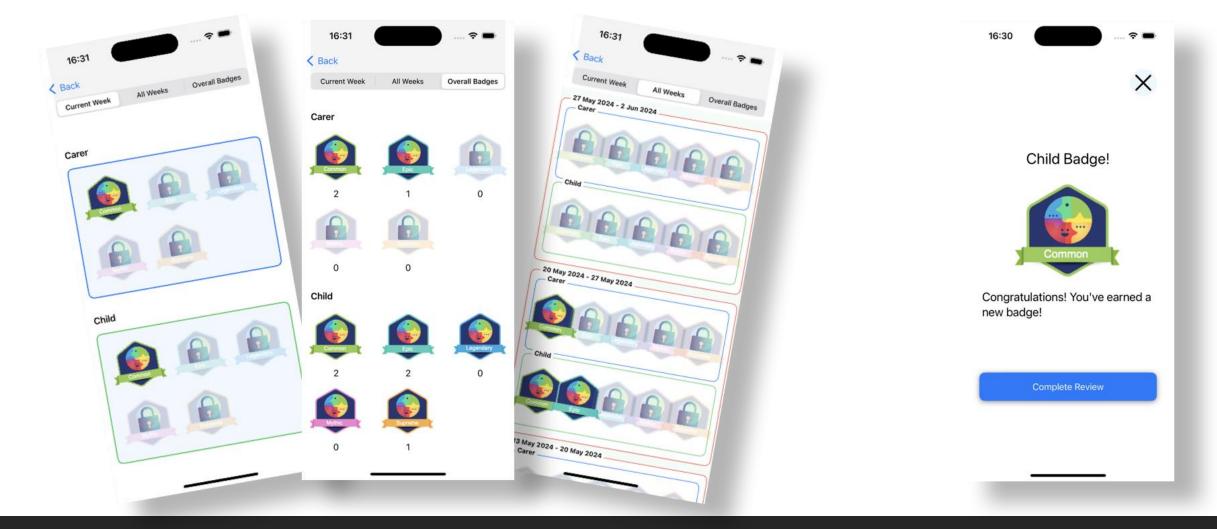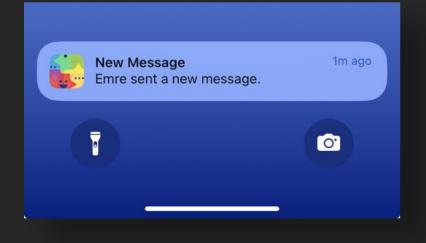
Reviews View

Badges View / Gamification

Chat

- Text and Voice messages
- Real time chat with web socket
- Notification on new message

What is left?

- **Multi-language Support:** Expanding the app and chat to support multiple languages.

- **LLM Integration in Platform:** Utilizing large language models to assist therapists in creating activities.

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Research Outputs

Papers in progress:

AI in speech and language therapy

Parent and SLT perspectives of home practice

Using Design Thinking to Develop an SLT platform

Conference Posters:

SFI Summit

IASLT Biennial Conference

HSE Better Together for Digital Healthcare

Website and newsletter to keep up to date
https://www.ncirl.ie/EngageSLT