Developing the AphasiaFit App

Sarah J. Wallace[1,2,7], Megan Isaacs[1,2], Peter Worthy[1,2,3], Janet Wiles[3], Kim Barron[1,2], Phill Jamieson[1,2], Gopal Sinh[1,2], Bridget Burton[1,2,] Ryan Deslandes[1,2,] Anthony Angwin[1,2,] Victoria Palmer[4], Matthew Gullo[5], Annie Hill[1,6,7], Barbra Timmer[1], Jessica Campbell[1,2], Kirstine Shrubsole[1,2,7] & David Copland[1,2,7].

[1] School of Health and Rehabilitation Sciences, The University of Queensland, Brisbane, Australia. [2] Queensland Aphasia Research Centre, Brisbane, Australia. [3] School of Electrical Engineering and Computer Science, The University of Queensland, Brisbane, Australia. [4] The ALIVE National Centre for Mental Health Research Translation; University of Melbourne. [5] School of Psychology, The University of Queensland, Brisbane, Australia. [6] LaTrobe University, Melbourne, Australia. 7 Centre of Research Excellence in Aphasia Recovery and Rehabilitation, Australia.

Queensland Aphasia Research Centre

Introduction

- Self-management is a model of care that can support recovery, health needs, and lead to empowerment (Barlow, 2002), however many existing programs do not meet the needs of people with aphasia (Wray et al., 2018).
- We describe the process and outcomes of Experience-Based Co-Design of a mobile health application to support aphasia self-management.

Methods

- Experience-Based Co-design and Human-Centred Design (see fig 1).
- A research advisory group comprising of people with post-stroke aphasia, significant others, and speech pathologists provided expert guidance, feedback, and oversight across the project
- People with chronic post-stroke aphasia (n=4), significant others (n=4), and clinicians (n=3) participated in co-design workshops over 15 weeks.
- Each session was co-facilitated by two research assistants living with aphasia (authors Jamieson and Barron).
- Flexible participation was supported using videoconferencing, individual sessions, and asynchronous completion of design journals.
- Technology components, functionality, and user interface designs, were co-created in reference to experiences, barriers and facilitators identified in Study 1a Experience Gathering.

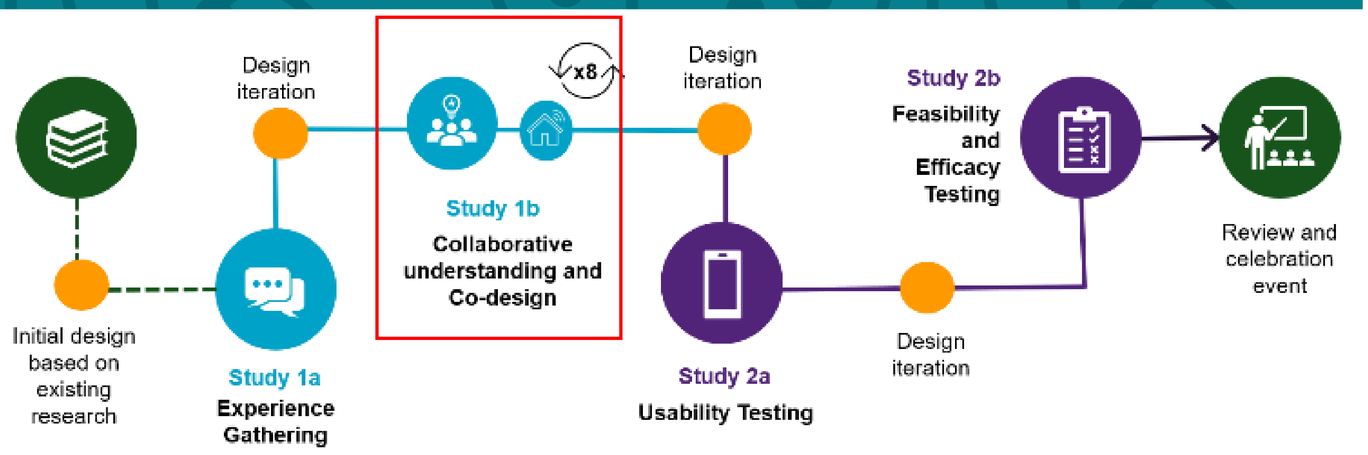


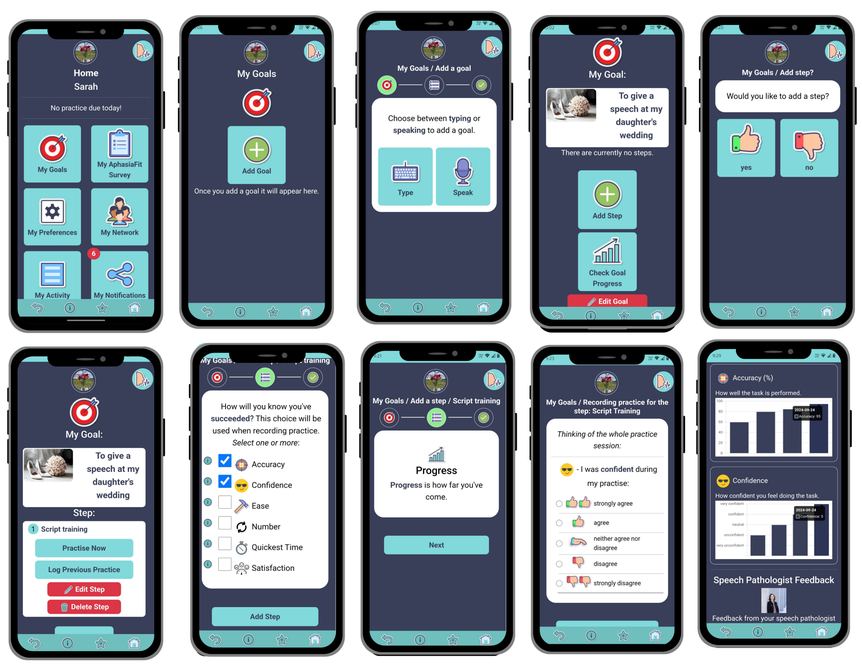
Figure 1. Project Overview

Results

- The resulting co-designed technology was named AphasiaFit.
- It is a 'platform' consisting of a central database and three apps (see fig 2).
- Technology components, functionality, and user interface designs respond to Study 1a Experience Gathering results (see table below).

Key design principles (Study 1a)	Application to AphasiaFit prototype
Connects you with speech pathologist, peers and community.	Embedded private social network connects the person with aphasia with their therapist and significant others. Speech pathologists can monitor progress using a data dashboard and provide feedback through the Therapist Web App. In-built Natural language Processing software allows for easy analysis of recorded language samples. Ecological Momentary Assessment surveys provide 'in-the-moment' self-reported outcomes. The person with aphasia can invite significant others to use the Companion App and can share goals and progress. Significant others can view goals and comment.
Links goals-therapy-outcomes.	Goals, therapy tasks, and outcomes are linked using the My Goals function. Progress against goals is visualised using graphs.
Shows progress visually. In a way that is appropriate and motivating.	Motivation for treatment is supported through collaborative goal setting, and progress monitoring/visualisation.
Is customisable and accessible.	Communication access is facilitated through personalised interfaces; text, picture and audio supports; and functionality to record personal information and life history.

Figure 3. Goal-therapy-outcomes workflow.



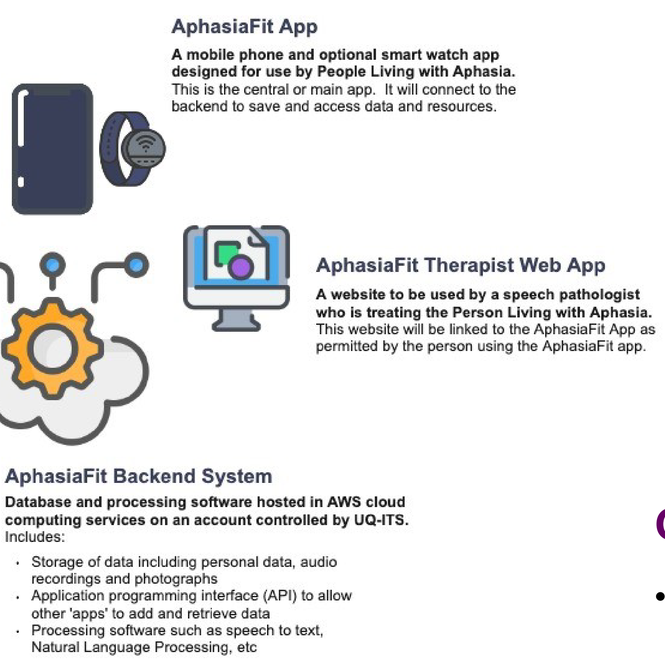


Figure 2. The components of the AphasiaFit Platform consisting of three software apps and a cloud hosted backend system.

Conclusions

- AphasiaFit is a co-designed technology-based platform which aims to support and motivate adherence to self-managed aphasia treatment.
- Preliminary usability testing is complete. A final phase of field testing is in progress.

Funding

This project is funded by the Medical Research Future Fund (MRF2007460). SJW and KAS receive funding from NHMRC Investigator Grants (1175821 and 2026816).

Contact

s.wallace3@uq.edu.au
https://about.uq.edu.au/experts/15869
@SarahJWallace
www.linkedin.com/in/sarah-j-wallace-2483471bb/

References

Barlow, J., Wright, C., Sheasby, J., Turner, A., & Hainsworth, J. (2002). https://doi.org/10.1016/S0738-3991(02)00032-0

Wray, F., Clarke, D., & Forster, A. (2018). https://doi.org/10.1080/09638288.2017.1294206

More information

A research centre of the STARS Education and Research Alliance | The University of Queensland | Metro North Health | Queensland Government | Australian Government National Health and Medical Research Council | NHMRC | Australian Aphasia Association | Medical Research Future Fund | Centre of Research Excellence in Aphasia Recovery and Rehabilitation