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# Tactus Therapy: Mobile AT for Aphasia

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## Overview

- **Pacific Speech, Hearing and Language Center**
  - Adults with communicative impairments and disorders (language, hearing, speech).
  - Aphasia apps focus on communication by improving vocabulary, memory, reasoning, attention, differentiation, and organization of concepts, presented as pictures, text, or audio (Galletta & Barrett, 2014).
  - Aphasia can affect populations such as those who have autism, TMI, stroke, and encephalitis (Galletta & Barrett, 2014).

## Problem Statement

- **Problem:**
  - A client's speech deficits affect their social participation and overall quality of life.
  - Stroke is the leading cause of adult disability in the U.S. (Escher et al., 2018)
  - 75% of TBI experience communication disorders; if treated early, recovery rates are high, even in severe cases (Vaezipour et al., 2020).
- **Project goal:**
  - We as a team want to extend our knowledge on how we can improve collaborative therapy to enhance performance and outcomes of therapy. This entails increases in the following:
    - Personalized Care (Not CC)
    - Accessibility
    - Affordability
    - Time efficiency
    - Engagement and Motivation
    - Caregiver involvement and support (D'Arrigo et al., 2020).



## Cost of the App tool

- **Low-tech**
  - Category therapy lite: Freemium
- **High tech**
  - Tactus Clinical Tools (5 apps): \$29.99
  - Tactus Aphasia Elements (4 apps): \$59.99
  - Tactus Aphasia Essentials (2 apps): \$109.99
- On average each app: \$20-\$45 (1-time fee)
- **Safety concerns:**
  - Avoiding long exposure- specifically being cautious of blue light
  - Clients with hemiplegia may fall if preoccupied using the apps while standing
  - Data breach: results can be emailed. Those who have access to client's phone can modify the sender and recipient emails. Results are not saved to device.

## Benefits to community

- Improving communication and confidence with socializing with friends and family.
- This app can be used wherever use of tablets or smartphones are permissible: in schools, hospitals, in clinics, at home, coffeeshops, malls, etc.
- According to Steele & Woronoff (2011), communication apps are capable of improving functional communication skills, naming accuracy for expressive language, language proficiency and overall aphasia.

## Desired Outcomes

- Short term goals
  - STG 1: In three months, clients will be able to verbalize 80% of words from a set of at least 30 pictures, with at most one cue per trial.
  - STG 2: In three months, client will be able to spell 80% of words from a set of at least 30 pictures, with at most one cue per trial.
  - STG 3: In three months, client will be able to complete a reading comprehension task with 80% accuracy from a set of at least 30 pictures, with at most one cue per trial.
- Long term goals:
  - LTG 1: Client will be able to engage in conversations related to ADLs, without cues provided, for 80% of trials.
  - LTG 2: Client will be able to engage in casual conversation with friends and peers without any cues provided, for 80% of trials.

## OT implementation

- OTs work with clients to improve ADLs. IADLs social participation, leisure, work, and meaningful activities. Communication is an important aspect in each of those.
- Areas OT can work on: Problem solving, assistive technology, goal setting, compensatory strategies, all to improve social participation within their desired community setting. (Escher et al., 2018)

**Bio:** Use of aphasia therapy apps allow the client to ask for cues without vocalizing their demand. Use of digital flashcards is a less fatiguing alternative to writing and shuffling cards.

**Psych:** Custom personalization increases client-centeredness of the therapy, which makes it less boring and less frustrating. Use of therapy apps at home frees up time spent in clinic working on executive functioning skills or other skills impacted by the client's condition .

**Social:** The general outcome of speech therapy is to improve quality and length of conversations with friends, family, peers, strangers, etc.



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