Developing an Interface to Support Procedural Memory Training using a Participatory-Based Approach

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**Project Goal**

To identify ways to aid individuals with deficits in procedural memory through the development of a mobile rehabilitative interface.

**Related Work**

Previous research suggests that individuals with cognitive disabilities see potential in technologies to support learning, memory, planning and organization [Hart et al., 2003].

Participatory approaches have been used to develop assistive technology prototypes for older adults and individuals with cognitive disabilities [Wu et al., 2004; Ellis and Kurniawan, 2000].

**Our Approach**

The application was presented during participatory design workshop held at a college designed for students with learning differences.

Two design sessions were held. Each involved a group of three students and one researcher.

Each team worked together to strengthen the design of the interface.

**Design of Prototype**

1. **Add New Activity**
2a. **Learn Activity**
2b. **Attempt process**

**Lesson Learned**

- Images provided a medium to convey complex ideas or concepts for discussion.
- Diagrams were able to assist with focusing attention.
- The group was important in triggering new ideas.
- Users are empowered to take ownership in improving the prototype, leading to more practically relevant solutions.
- The challenge to participatory design related to participants maintaining focus and finding a common language/vocabulary.

**Participatory Design Sessions**

- **Session 1**
  - Several additional quizzes and feedback options were discussed in order to motivate individuals to utilize the application.

- **Session 2**
  - Improvements to navigation were discussed, as well as adding more feedback to monitor performance.

**Future Work**

Integrate the findings and conduct a longitudinal study to determine the application’s efficacy. The goal of the application is to support the user through tasks that would aid independent living.

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