Research Week 2020

Smart Predict: AAC app that integrates partner knowledge into word prediction

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Keywords

AAC, Assistive Technology, Communication Disorders

Abstract

BACKGROUND

Smart Predict is a mobile tablet-based dual-app system for augmentative and alternative communication (AAC) which permits vocabulary supplementation by partners to support communication by people with neurodevelopmental or neurodegenerative disease who use speech generating devices for expressive language. Partners augment word prediction capabilities while persons with complex communication needs control message construction.

PURPOSE

To evaluate Smart Predict to determine whether (1) partner engagement is increased during conversation; (2) message production is faster when the novel AAC app is used.

METHOD

Six literate adults who use AAC and three communication partners without disabilities participated in two single case alternating treatments research designs. Experiment I examined partner engagement; Experiment II examined efficiency. Each experiment included five data collection sessions with counterbalanced conditions. In the Smart Predict only condition, AAC users typed with the Smart Predict app alone. In the Smart Predict + partner app condition, partners used a separate tablet to add contextually relevant vocabulary to the user's app word prediction line.

RESULTS

Experiment I

Partner disengagement, measured by off-task behaviors observed, was greater in the Smart Predict only condition. Data visualization indicates no overlap in data between conditions; the supplemental vocabulary condition showing consistently increased partner engagement.

Experiment II

AAC users demonstrated greater message efficiency, measured by characters/minute, in the Smart Predict + partner app condition. AAC user effort, measured by selections/character, was reduced in the Smart Predict + partner app condition in most sessions. In one instance, a unique phrase was not predictable, suggesting that vocabulary supplementation is not helpful if partners don't share familiar lexica.

CONCLUSION

Under controlled conditions, Smart Predict + partner app increases partner engagement during conversations, increases message efficiency, and reduces effort. The contribution of supplemental vocabulary by knowledgeable partners enhances message generation. The concept of Smart Predict should be transferred to AAC technology.