THE GROWTH OF *PHRASES*

User-centred Design for Activity-based Voice Output Communication Aids

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Abstract

An activity-based vocabulary for Voice Output Communication Aids (VOCAs) was designed and evaluated through a user-centred, iterative design process, using expressions from the Gothenburg Spoken Language Corpus as well as other recorded, natural conversations. The growth and development of the vocabulary, called *Phrases*, was closely linked to its evaluation. The iterative design process included prototyping, collaboration with users, and modifications to the different versions of *Phrases*. The aims of the thesis were to investigate and visualise what goes on in interactions involving VOCAs, investigate the utility of a spoken language corpus in constructing AAC vocabulary, to evaluate the usability of *Phrases*, and to compare the effectiveness and efficiency of phrase creation to that of phrase selection. Four young adults with cerebral palsy, who used Augmentative and Alternative Communication (AAC), took part in the evaluation, as did sixty adults without speech impairments. The *Phrases* vocabulary was primarily built around pre-stored expressions for shop interactions and general quickfire expressions, including greetings, acknowledgements, feedback and expressions for communication management. It was tested in real and role-played shopping activities, and in an experiment. The results showed that phrase selection under certain circumstances can be faster than phrase creation, and that pre-stored phrases can enhance both the speed and enjoyment of VOCA-mediated conversations, providing that the users have learned where to find the expressions. The quickfire section was appreciated by all participants, but the activity shopping turned out to be of lesser importance to the four participants using AAC than was presumed from the beginning. Using a VOCA in a service encounter such as shopping turned out to be a complex undertaking for individuals with severe motor impairments. A model from Cultural-Historical Activity Theory provided useful insights into the contributing factors. The evaluations of the second version of *Phrases* gave valuable suggestions for the modification of future versions, such as making the activity structure more transparent, keeping phrases which were used while removing others, and adding new activities.

Keywords: AAC, Activity, Assistive Technology, Communication, Conversation Analysis, Corpus Linguistics, Cultural-Historical Activity Theory, Pragmatics, User-centred design.