THE ROLE OF ASSISTED COMMUNICATORS AS DOMAIN EXPERTS IN EARLY SOFTWARE DESIGN

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User-Centred Design (UCD) methods (for example, Shneiderman, 1992; Preece, 1994; Vredenburg et al. 2002) place the user and their activities at the centre of all stages of the design process. Moving from "system-centred" to "user-centred" design has enabled great improvements to be made in the effectiveness of user interfaces (Wood, 1998). However, the UCD approach presents a challenge for people who use AAC. They are often observed as end-users and are sometimes asked for their opinion during the prototyping phase; but they are seldom asked for their opinion of what they would like their communication system to do for them at the very earliest stages of development.

Background

Issues surrounding the role of assisted communicators as domain experts (people who are expert users of current systems) arose during new research exploring possible interfaces to a novel word play system.. The system is designed to facilitate the use of humour as a means to help allow assisted communicators to project their personalities, learn the rules of conversation and play with language (O'Mara and Waller, 2003).

An early paper interface was developed and feedback was sought from four adults with complex communication needs. First, it was explained that this was exploratory research and that the interface was not, and may never be, a fully functioning product. This point appeared to be understood by the group, but it was soon evident that this was not in fact the case. The assisted communicators found it difficult to accept that they were part of an early phase of research and that the new interface could not simply replace their existing communication aid overlay for immediate use. Some confusion and distress emerged as participants realised that such a system was not yet, or might never be, commercially available.

Second, although it was possible to gain the users' opinions of what they thought of aspects of the new interface – the colours, size of font etc – using closed questions; it was extremely difficult for them to envisage what they would like the system to do. The participants were unable to move beyond commenting on the ideas already presented in the interface.

A number of strategies were developed to address these issues:

Prototyping Strategies

The difficulty in understanding the research concept was overcome by dispensing totally with the computer when demonstrating the prototype. It would be usual to introduce a computer based vertical prototype, a technique often used in software development where much of the perceived functionality is in fact simulated, after evaluation of the paper interface. Instead of introducing the participants to a computer prototype as would be the norm, the prototyping scenario was implemented using a light-tech approach in light of the problems observed to avoid further misunderstanding

as the computer would imply a completed product.

Each screen interface of the word play prototype was copied from the computer onto laminated card. The sequence of telling a chosen joke (playing with words) to a carer was simulated, with the investigator acting as the computer by presenting each chosen screen (the laminated card) and option to the user. The procedure was video-taped. There was no evidence or report of any confusion and it was evidently an enjoyable experience for all participants.

Using light-tech prototyping of a high-tech product, though not a new concept in software design, is not usually employed at this stage of the design process. Innovative approaches to prototyping which remove the technology, while highlighting the interaction, allows people with significant disabilities to focus on the task. In addition, problems associated with physical access, which may interfere with task assessment, are reduced.

Strategies for Gathering Novel Feedback from Domain Experts

Although researchers have highlighted the need for training in usability issues if disabled users are to have the skills needed to contribute to the design process (Buhler, 1999) this contribution usually relates to the evaluation of fully functioning prototypes.

We suggest that the inclusion of end-users as domain experts should be at a far earlier stage in the design life-cycle, at the requirements gathering stage. Requirements gathering usually depends on the pooling of ideas of a range of experts - researchers, assistive technologists and AAC practitioners, and by observing end-users, often without direct involvement from people with disabilities or their families (Waller, 2003). The use of novel prototyping techniques, such as the above, provides a means by which people who use AAC can take the role of domain experts in the earliest stages of the design process.

Conclusion

This presentation proposes that if people who use AAC and their families are to become an integral part of the development process then they should be taking the role of domain experts as early as the requirements gathering stage. Research relating to the role of people who use AAC as domain experts in the ongoing development of the STANDUP project (System To Augment Non-speakers' Dialogue Using Puns) will be presented.

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