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Communication Aids for Toddlers

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Are you concerned that your toddler or child who needs a communication aid will have difficulty learning to use it? This concern is valid, according to Dr. Janice Light and Dr. Kathy Drager of the Rehabilitation Engineering Research Center on Communication Enhancement. Past research by Drs. Light and Drager concluded that most very young children have difficulty learning to use some existing communication aids because of their design.

In response to this conclusion, Drs. Light and Drager are currently conducting further research at Pennsylvania State University. Their studies intend to make communication devices easier for young children to use and to make these devices more appealing as well. New designs in communication aids arising from this research may also benefit older individuals with cognitive limitations.

The initial research by Drs. Light and Drager revealed that very young children have difficulty using features of existing communication devices, at least in part because of the way these devices represent and organize vocabulary on their displays. Their research showed that many generic line drawings, known as icons, may not be meaningful to beginning communicators. Also, icons on traditional displays are often arranged in rows and columns and grouped by category (e.g. all people in one cluster, all foods in another). Very young children have trouble relating to such layouts because this is not the way that children think about the world.

The above findings have led Penn State researchers to investigate the use of a new technology, known as visual scene displays (VSDs) on communication aids for very young children. Visual scene displays use digital photographs of personalized scenes rather than icons to represent language and support communication. A display may consist of one or more photographs of images to create a familiar scene, like a child playing with a favorite toy or a family eating a meal.

The primary advantage of using visual scene displays with beginning communicators is that these displays replicate a child's real world to a high degree. For instance, "Mommy" on a VSD could be represented by an actual photograph of the child's mother in a familiar setting engaged in a familiar activity. Even very young communicators can relate to this familiar image.

Pointing to the image of the child's mother on a visual scene display is a natural extension of when an infant points to his mother to get her attention. Since the child communicates using extensions of familiar methods, very young children can have immediate success communicating with this assistive technology.

Visual scene displays can be implemented on both low-tech communication boards and high-tech communication devices. When used on communication boards, the child manually points to the desired photograph or items within the photograph. His communication partner then provides the speech output, co-constructing messages with the child. Currently, VSDs

are not widely available on high-tech communication devices. Light and Drager, however, are working with the communication device manufacturers to develop this approach further.

The research presently being done by Drs. Light and Drager aims to quantify the benefits of visual scene displays for three groups of children:

* young children (ages 1-3) with developmental disabilities such as cerebral palsy,
* older individuals (adolescents and adults) with significant cognitive impairments, and
* young children with autism spectrum disorders

To learn more about this study, go to the Rehabilitation Engineering Research Center on Communication Enhancement website to view a recent webcast on the topic at www.aac-rerc.com or e-mail Dr. Light directly at JCL4@psu.edu.

Resources:

Drager, K., Light, J., Carlson, R., DSilva, K., Larsson, B., Pitkin, L., Stopper, G. (2004) Learning of dynamic display AAC technologies by typically developing 3-year-olds: Effect of different layouts and menu approaches. Journal of Speech Language Hearing Research, 47, 1133-1148.

Light, J., Drager, K. McCarthy, J. Mellott, S., Parrish, C., Parsons, A., Rhoads, S., Ward, M., & Welliver, M. (2004). Performance of typically developing four and five year old children with AAC systems using different language organization techniques. Augmentative and Alternative Communication, 20, 63-88.

Light, J., Drager, K., & Nemser, J. (2004). Enhancing the appeal of AAC technologies for young children: Lessons from the toy manufacturers. Augmentative and Alternative Communication, 20, 137-149.

Fallon, K., Light, J., & Achenbach, A. (2003). The semantic organization patterns of young children: Implications for AAC. Augmentative and Alternative Communication, 19, 74-85.

Drager, K., Light, J., Curran-Speltz, J., Fallon, K., & Jeffries, L. (2003). The performance of typically developing 2 ½-year-olds on dynamic display AAC technologies with different system layouts and language organizations. Journal of Speech, Language and Hearing Research, 46, 298-312.

Light, J. & Drager, K. (2002). Improving the design of augmentative and alternative communication technologies for young children. Assistive Technology, 14, 17-32.

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