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Playing with Language: AAC and Robots

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Summary:
Assistive technologies have been used to enable play by adapting battery powered toys to be controlled by a single switch activated by a gross motor movement. This engages children and provides a sense of control, but the repetitive action of the toy causes the child to lose interest. There are also simple electronic aids to daily living (EADLs) that allow an appliance such as a food mixer to be plugged in and controlled with a single gross movement on one switch. This allows a child to participate in activities with other children. For example a child with fair fine motor control could open a package of pudding, pour it in to a blender. Another child might add milk and a child with very limited motor control could mix the ingredients using the EADL.

Typically developing children also talk duirng their play and this communication is an important element of the play experience Often children have to disengage from play in order to communicate and vice-versa (Light & Drager, 2002).. One challenge with many EADL or switch controlled toy situations is that a child who using augmentative communication must choose between controlling the toy or EADL or controlling her communication device. Anderson (2000) overcame this choice problem by having children control infrared toys from their communication device and reported that this approach offers "highly motivating activities for use in the development of language" (p. 7). Although this approach solves the problem of integrating play and communication, infrared toys will always perform the same function, becoming boring after a while.

To overcome the problem of repetitive actins being boring to the child, infrared controlled robots like the Lego roverbot can be controlled via the SGD (Adams, Yantha and Cook 2008) . This is important because much of play and selected portions of the academic curriculum involve manipulation of real objects. Many SGDs have the capability to learn infrared commands. This creates an opportunity for children to control a robot using their communication device. They can also talk while they play just as typically developing children do.

This presentation will describe recent work at the University of Alberta by Professors Al Cook and Kim Adams that explores ways in which AAC and play can be integrated using robots.

Frame of reference:
Communication is a fundamental part of play for typically developing children. The use of augmentative communication devices to control play objects such as robots can enhance the play experience for children who have complex communication needs.

Reference:

Adams, K Yantha, J & Cook AM, Lego Robot Control via a Speech Generating Communication Device for Play and Educational Activities, *RESNA Annual Conference*, 2008, Washington, DC.

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