Research Summary on Assistive Technology Interventions

A research synthesis reviewed 104 articles published from 1980 through 2004 on the use of assistive technology (AT) with infants and young children (Campbell, Milbourne, Dugan, & Wilcox, 2006). Of the 104 articles, 77 were descriptive studies or discussion-oriented articles about recommended AT practices and 23 reported the results of studies that focused on teaching children how to use AT[i]. All of the studies focused on whether children could learn how to use AT rather than the effects of AT on children's learning and development.

How were AT practices defined and implemented?

Most of the 23 studies focused on teaching children switch activation use (e.g., to activate computerized toys). A number of studies examined strategies to teach young children to use power mobility devices (e.g., motorized wheelchairs) and computers. Only one of the 23 studies reported on the effectiveness of teaching young children to use augmentative communication devices. Information about who facilitated children's use of AT was not provided in the review. Therefore, it is unclear whether teachers, family members, or researchers implemented the AT practices with children who participated in this research.

What were the characteristics of the participants and settings?

Across all studies, the sample size ranged from 1-120 children. The infants and young children ranged in ages from 2.5 to 60 months and were reported as having cerebral palsy, severe multiple disabilities, physical disabilities, global developmental delays, mild mental retardation, speech and language delays, and Down syndrome. The review did not describe the characteristics of the settings in which children used AT.

What were the key findings related to children's use of AT?

As a whole, the studies provided relatively strong evidence that children as young as 12 months with various types of disabilities and developmental delays could be taught to operate switches to activate toys and other devices. The results of studies examining children's use of augmentative communication, power mobility devices and computers were inconclusive due to insufficient research or problems with the research design. Across all studies and AT devices, the review found that the primary teaching strategy was providing opportunities for children to access the device and to practice using it, either alone or with minimal adult involvement.

Bottom line

Research on AT has shown that even very young children with physical disabilities and developmental delays can learn how to use AT devices successfully. However, further research is needed to evaluate the intervention effectiveness of AT not just on performing isolated skills but for promoting children's successful participation and learning within the context of everyday activities.

Campbell, P. H.,Milbourne, S., Dugan, L. M., & Wilcox, J. M. (2006). A review of evidence on practices for teaching young children to use assistive technology devices. *Topics in Early Childhood Special Education, 26*(1), 3-13.

[i] The majority of the 23 studies employed single-participant designs; one study used a group design with random assignment to treatment and control conditions; and the remaining studies used quasi-experimental designs, case studies, or qualitative methods.