



KIT

"Keeping In Touch"

April 2010



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Resource Article



Children learn within the context of their everyday routines, activities, and interactions with others. Participation is therefore a key component to learning. Yet, some children require special

accommodations in the form of assistive technology (AT) and augmentative and alternative communication (AAC) to optimally participate in everyday activities and fully reap the learning potential associated with everyday happenings.

The KIT article this month "Creating a Technology Rich Learning Environment for Infants and Toddlers with Disabilities," by Judge, Lloyd, and Woods-Field, highlights AT devices that can help promote young children's participation and explores ways to infuse AT and AAC into everyday life.

The Individuals with Disabilities Education Act (IDEA 2004) defines AT as "any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability." IDEA further stipulates that AT be considered for every child with an Individualized Education Plan (IEP) or Individualized Family Service Plan (IFSP). AT is not reserved only for children with severe disabilities, as it may be helpful and necessary to promote participation in

a vast array of ways for children with varying delays or disabilities.

Participation in play is a powerful learning activity for young children and there are a myriad of ways to modify play environments and experiences to facilitate increased participation. For example, just about any battery-operated toy can be adapted so that it can be activated by a switch making it accessible for a child who is otherwise unable to activate the toy. Beyond battery-operated toys, a child's position or means of moving about can be augmented to create optimal play proximity or ease their ability to move about thereby enhancing their participation in play with caregivers and peers and facilitating their ability to make play choices. Computer usage and software is yet another resource that can be used to advance young children communication and active participation. However, as the authors point out further research is needed to better understand the possibilities and potential with very young children.

AAC technologies offer a wealth of mechanisms to augment the communication abilities of young children. Within the realm of AAC, there are low and high tech possibilities. Low tech options or unaided forms of communication include nonverbal natural communication (e.g., sign, objects, pictures, books...) whereas high tech AAC or aided forms require some external support (e.g., electronic communication boards). Consideration of AAC must be individualized and should start with consideration of low tech options, but must not discount high tech possibilities for young children. Furthermore, AAC usage need not be one sole approach, as a

combination of systems or methods may be necessary. AAC must also fit the culture of the family and work within the natural environment.

The authors identify a few myths associated with AAC use with young children. These include:

- "...that young children benefit less from AAC technologies than do older children" (p. 88)
- "...that children need to demonstrate prerequisite skills for successful AAC use" (p. 88)

More accurately, AAC interventions have been found to have a positive impact on young children. Furthermore, early use of AAC can provide foundational understanding for use of more complex systems (as needed) as the child gets older.

Overall, AT and AAC interventions should maintain focus on promoting children's participation in everyday routines, activities, and interactions and be included in the mix of possibilities for all children on an IFSP.

Judge, S., Floyd, K., Wood-Fields, C. (2010).

Creating a technology-rich learning environment for infants and toddlers with disabilities. *Infants and Young Children*, 23(2), 84-92.

On the WWW



The web resource this month is the AAC Institute. The institute is "dedicated to the most effective communication for people who rely on AAC."

<http://aacinstitute.org>

In addition to a host of resources including a parents' corner and multiple products, this website offers self-study courses on AAC. A perk is that ASHA CEUs are available for these courses.

To locate the courses on the above website click on the purple "education and training" tab.

Topics of self-study include:

- **Introduction to AAC:** This course includes eight modules and was designed for those new to the field of AAC (augmentative and alternative communication). It provides information on AAC, who uses AAC, stakeholders and goals based on user values. Components of AAC systems are reviewed.

- **Language- Based Approach to AAC Assessment and Intervention:** This course includes six modules and provides information on a structured approach to AAC assessment and intervention that focuses on language issues rather than technology features.

- **AAC Performance Report: Definition, Generation, and Use:** This course includes six modules and identifies and defines the 17 quantitative summary measures of communication performance contained in the AAC Performance Report, how to generate the report, and how to use it in guiding clinical practice.

- **AAC Language Representation Models:** Three language representation methods are used in AAC: alphabet-based methods, single meaning pictures, and semantic compaction. This course includes seven modules and provides examples, and reviews of each of the three methods including unique characteristics.

As you work through the modules of each course you'll need to do them sequentially and complete each module before the program will advance to the next module.

What Do the Data Say?

What are providers and parents beliefs about the use of AT in early intervention?



In a study by Wilcox, Bacon, and Campbell (2001) the researchers completed phone

interviews with early intervention providers and parents of infants and toddlers in early intervention. Part of the survey focused on discovering providers' and parents' beliefs that might influence decisions regarding the use of AT. Four statements, proposed as possible reasons for underutilization of AT in early intervention, were included in the survey and respondents were asked if they agreed or disagreed with the statements. A sample of 967 providers who worked with a minimum of three children per week and a sample of 924 parents of children in early intervention completed the phone interviews. The table below shows the four statements and the provider and parent responses.

Statements	Provider	Parent
1. Young children need to have certain skills (e.g., using their hands or ability to recognize symbols) before they can use AT.	73.9% disagreed	44.6% disagreed
2. AT requires extra effort of a child and is much easier to just do things for the child.	94% disagreed	73.7% disagreed
3. Using AT means giving up on doing things the natural way and may prevent the child from learning certain things.	96.4% disagreed	77.6% disagreed
4. AT costs a lot of money and it is a good idea to wait until the child is older to decide what will work.	92.9% disagreed	78% disagreed

With the exception of the first statement parents were in agreement with providers' perspectives concerning these common myths about AT.

Regarding the need for prerequisite skills (statement 1.) the majority of providers saw prerequisite skills as not necessary while less than half of parents shared this belief. As noted by the researchers this difference may influence the

decision-making process around the use and perceived success of AT.

Wilcox, M., Bacon, C., and Campbell, P (2004).

National Survey of Parents and Providers Using AT in Early Intervention, *Research Brief Volume 1, Number 3*. Tots n Tech Research Institute. Retrieved from

<http://tnt.asu.edu/research/briefs April 2010>.

Consultation Corner



From March through July 2010 the consultation corner topic is:

Assistive Technology in Early Intervention

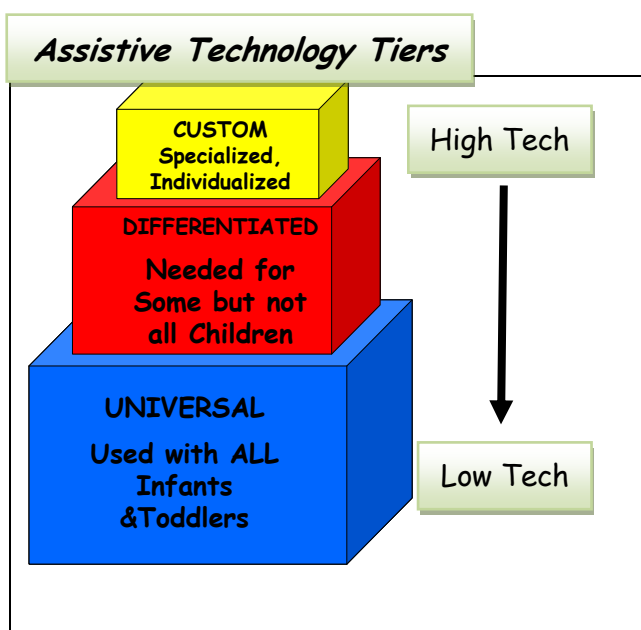
What is AT for very young children?

Young children spend each day participating in activities and routines in their homes and in the communities in which they live. These activities and routines can include, bath time, morning routine, story time, community outings, mealtime, bedtime, outdoor play, chores, leaving the house, playtime, errands, travel time and countless others that may be unique to individual families. Some children may also participate in out-of-home childcare with expectations for engaging in group care activities and routines. Independent participation in these activities and routines strengthens children's functional skills, increases social interaction, and fosters self-esteem. Unfortunately, many children have difficulty participating in activities and routines, leading to frustrations for both the child and caregiver(s). Assistive technology, or AT, may be used as a tool to help children participate independently during challenging activities and routines. Additionally, using AT during successful activities and routines creates numerous learning opportunities for children, allowing them to develop and strengthen functional skills such as communication or mobility.

Personal definitions of AT are shaped by experiences with AT devices and services. Families

and professionals will all have different experiences with AT, resulting in varying definitions. A parent whose child uses a scooter to get around during outdoor playtime will view AT differently than a professional who teaches families to use picture schedules to help with making transitions. Due to the varying nature of AT, families and professionals may have difficulty agreeing upon a common definition of AT.

From a legal standpoint, the Individuals with Disabilities Education Act (IDEA) defines an AT device as “any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of a child with a disability.” This definition includes a very broad range of devices, from high tech (e.g., powered wheelchairs) to low tech (e.g., adapted spoons). It also includes AT that could be used universally by children, such as large grips on toys; AT that could be used to help children do something they are not able to do at the present time, for example, a picture board schedule; and customized AT that allows children to do something they would not be able to do otherwise, such as specialized positioning equipment (see diagram below). This broad legal definition allows families and professionals to select items that are most beneficial to their children.



What is the difference between high tech and low tech devices?

Assistive technology includes a wide range of devices and materials. Some are very complex while others are quite simple. The complex devices are known as high technology, or high tech AT. High tech devices are usually complex and electronic. They often require special training to learn how to use. High tech devices are typically expensive and have to be specially ordered from AT companies. If a high tech device breaks it may need to be sent back to the manufacturer to repair or to a person who specializes in AT repair. High tech devices can assist with a range of functional disabilities in a variety of activities and routines.

Examples of high tech devices are:

- Computers
- Motorized wheelchairs
- Electronic communication devices
- Environmental control units

In contrast, low technology, or low tech devices (sometimes called light-tech) are usually very simple. Many low tech devices do not require power to operate and those that do use AA or AAA batteries. Low tech items can be made with common household items and also can be purchased from non-specialty stores. Low tech devices are generally easy to repair or replace. These devices can be used in a variety of activities and routines to assist with a range of functional skills.

Examples of low tech devices are:

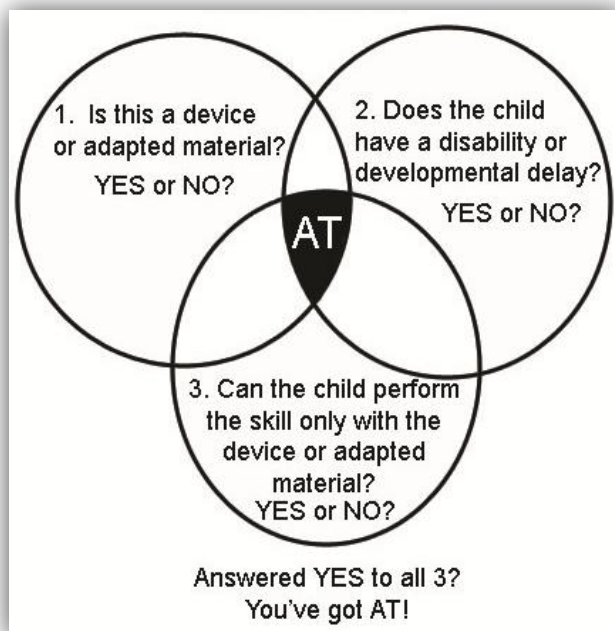
- Switches
- Communication boards
- Grips
- Symbols/pictures/objects
- Dycem
- Bolsters

How do I know if something is AT?

AT devices and services are purposefully defined broadly in order to encompass situations that may occur with children from birth through high school graduation. Regulations neither specify allowable

devices nor define roles for specific individuals but center on increasing, maintaining, or improving children's functional capabilities.

One way of thinking about whether a particular device would be labeled as AT is to consider the three questions/conditions diagrammed below. First, what the child is using is a material or device. Second, the child using the device or adapted material needs to have a disability or



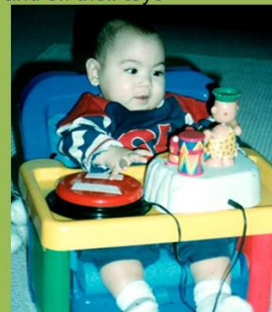
delay in an area of development. Third, the only way that the child can perform the skill or task is with the device or adapted material. If all of these three conditions are met the device can be considered AT.

How are AT devices used to promote children's participation in family-identified activities and routines?

Listed below are some examples of activities and routines in which AT can be used to increase participation.

Playtime

A switch-operated toy, which is a battery-operated toy that has been modified for use with a switch, can be used during playtime to increase a child's independence in turning on and off their toys



More information about switches can be found in Tots-n-Tech's January 2009 newsletter:

<http://tnt.asu.edu/home/news>

To see a video of a child using a switch operated toy visit this link:

<http://www.youtube.com/watch?v=eEoQjHNmh1s>

Mealtime

An eye gaze frame, which is a type of communication device where the child uses eye movements to make choices, can be used to help the child communicate what they would like to eat for a snack



Directions for making an eye gaze frame can be found here: <http://tnt.asu.edu/ideas/eye-gaze-frame>

Bedtime

Bolsters, or cushions/pillows that help with positioning, can be put in a child's crib to help the child stay positioned during sleep



Directions for making bolsters can be found here: <http://tnt.asu.edu/ideas/inexpensive-bolsters>

Physical/Outdoor Play

A wheelchair, scooter, or toy bike/car can help young children who are unable to crawl or walk move around without the assistance of an adult



More information on mobility can be found in Tots-n-Tech's May 2009 newsletter:

<http://tnt.asu.edu/home/news>

To see a video of a child using a scooter for mobility visit this link:

<http://www.youtube.com/watch?v=ot4b5C9HBoQ>

In Early Intervention, AT devices and services are likely to be provided by therapists, teachers, or other professionals who work with children and families. The Individuals with Disabilities Education Act not only addresses AT devices but defines an AT service as "any service that directly assists a child with the disability in the selection, acquisition or use of an assistive technology device." Assistive technology devices depend upon the services that go along with them. Families may require assistance in deciding what kind of AT may benefit their children or they may need help to learn to use the device once it has been obtained. Assistive technology services help families understand and navigate the world of AT.

Any professional who is working with a child and family may assist in making decisions about AT. Professionals such as physical or occupational therapists, speech language pathologists, or teachers are the most likely providers involved in AT decision-making. An occupational therapist, for example, may be the professional who suggests an adapted spoon or bowl so that the child may learn to feed herself independently and likely also teaches the child's caregivers how to use these devices successfully. Or the speech language pathologist may explore the use of a voice output device, picture exchange cards, or a picture

communication board to improve a child's communication. The age of the child, child needs for participation, type of device, and professional(s) providing assistance all shape how AT is used by a child or family.

Continuing Education for KIT Readers



The Comprehensive System of Personnel Development (CSPD) is offering a continuing education opportunity for EDIS KIT readers. In line with the focus on AT in EI, readers are invited to receive continuing education contact hours for reading the monthly KIT publications (March 2010 through July 2010) and completing a multiple choice exam about the content covered in these KITs.

If you are interested, take the exam online at www.edis.army.mil and upon successful completion, you will receive a certificate of non-discipline specific continuing education contact hours.

Please send your Consultation Corner questions and KIT ideas via email to ediscpd@amedd.army.mil

