Using Low-Tech Assistive Technology to Promote the Successful Inclusion of Children with Disabilities in the Early Childhood Setting

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What is Assistive Technology (AT)?

Assistive Technology (AT):
- AT is defined by the federal government as “any item, piece of equipment or product system, whether acquired commercially or off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities.”
- AT enables children with disabilities to participate on an equal basis with peers and are categorized as either High Tech, Mid Tech, or Low Tech.
- High Tech AT is commonly more specialized for a specific child, such as some augmentative communication devices or electric wheelchairs.
- Low Tech AT can be found in the everyday, organic setting like a towel or a foam hair curler and are less specialized. General classroom items can be used in conjunction with a child to assist them in the development of communication, fine motor, and gross motor skills.

An Inclusive Setting

As defined by the Division for Early Childhood (DEC) and the National Association for the Education of Young Children (NAEYC) (2009), early childhood inclusion, "embodies the values, policies, and practices that support the right of every infant and young child and his or her family, regardless of ability, to participate in a broad range of activities and contexts as full members of families, communities, and society. The desired results of inclusive experiences for children with and without disabilities and their families include a sense of belonging and membership, positive social relationships and friendships, and development and learning to reach their full potential. The defining features of inclusion that can be used to identify high quality early childhood programs and services are access, participation, and support."

Early Childhood Inclusive Education is “when all children are placed in age-appropriate general education classes that are in their own neighborhood schools to receive high quality instruction, interventions, and supports that enable them to meet success in the core curriculum.”

Low-Tech AT in an Inclusive Setting

Communication

Augmentative-Alternative Communication (AAC) Devices: These devices are tools that are meant to improve communication in daily life. Using AAC devices means that a person is using anything other than speech to communicate. The tool used depends on the skills and abilities of the person who is using it. Receptive and expressive language abilities, mental age, and physical limitations, are just some of the factors that influence what type of AAC device will be used.

Picture Exchange Communication System (PECS): A communication system that utilizes photos and picture symbols (as seen below). A low tech version of this is typically referred to as a communication board. These boards can be made for specific situations and activities. For example, there are “I want” boards, meal boards, seasons boards, holiday boards, etc.

Fine Motor

Self-feeding and writing are important fine-motor skills used in the Early Childhood setting. For children who do not have the necessary fine motor skills, adapted devices are useful for fine motor activities such as writing and self-feeding.

Adapted Utensils: These devices are useful because they are adapted to allow for more normal self-feeding. Many children with disabilities do not have the fine motor skills necessary to self-feed. Weighted utensils can reduce spillage and shaking, or provide more sensory information to the user. Adapted grip utensils (as seen below) provide the opportunity for independence and reduce frustration during self-feeding.

Pencil Grip: A device as simple as a pencil grip (as seen below) can be essential to allow a child with disabilities to function normally in the classroom. A pencil grip can provide the thickness necessary, or can help with correcting how the pencil is held.

Gross Motor

Seating and Positioning: Sitting requires trunk control and stability. Children with disabilities, such as those who have Down Syndrome, with low muscle tone, or Cerebral Palsy, with high muscle tone, do not have the necessary trunk control to sit independently. Using a rolled towel to wrap around the child’s waist can provide the necessary support needed to sit independently. Another item that can be used is a laundry basket, which can also provide the necessary support for independent sitting. These simple Low-Tech devices can provide the necessary support to improve the functional capabilities of children with disabilities in the early childhood setting.

Ambulation: A form of ambulation is walking. Gross motor skills are necessary for ambulation because it requires control of the large muscle groups. For children with neuromotor impairments, such as those with Cerebral Palsy, their ability to ambulate may be limited; however, with the aid of AT, they may be able to achieve some form of functional ambulation. A gait trainer or walker (as seen below) may be equipped with weight bearing features, and harnesses that encourage control of a person’s trunk and posture. For those with more muscle control, such as those with orthopedic impairments, canes (as seen below) may be an appropriate form of AT to allow for independent ambulation.

Benefits of Low-Tech AT

Low-Tech AT allows young children with disabilities to gain skills academically and independently. As a fundamental work tool rather than just an educational tool, AT is essential to children with disabilities in helping them learn basic skills and integrating them into the classroom. Children with disabilities may be developmentally delayed compared to their same-age peers. AT enables children to better reach developmental milestones and allows them to participate on an equal basis with their peers in an integrated setting.

Conclusion

Low-Tech AT is easy to implement and cost effective. There are many everyday items, such as towels or laundry baskets that can be used to support children with disabilities. The goal of Low-Tech AT is to allow for greater independence and decreased frustration to improve the functional capabilities of students with disabilities. In an early childhood setting, Low-Tech AT is easily implemented, and can support the acquisition and development of necessary communication, fine motor, and gross motor skills.

BIBLIOGRAPHY


