Assistive Technology Supports for Early Childhood Literacy

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What do page fluffers, built up handle grips, and pool noodles have in common? They are just a few examples of low/no tech assistive technology solutions that can be used to increase access to play or other activities in a child's daily routine.

Young children with motor, cognitive, communication, hearing or vision deficits can benefit from simple to complex adaptations that assist them with communication, movement, participation in self care tasks and manipulation of toys and books.

Assistive Technology is defined in IDEA '97 and requires the IEP team to consider the assistive technology needs of a child during the development of the Individualized Family Service Plan (IFSP) or Individualized Educational Plan (IEP). The team should assess the tasks in the child's daily routine and determine solutions required to increase independence and participation in these environments.

The continuum of assistive technology solutions range from low/no tech, mid tech and high tech. It is usually best to begin with low tech solutions. These solutions are more readily available, simpler to use, and more easily accepted by the child, family, school team, and the child's peers. Even simple adaptations to toys and books that increase a child's independent participation can increase self esteem by giving them a sense of control over their environment and feeling of success. Families also benefit from seeing their child's strengths and the increased opportunities for interactive play. Increased peer interaction and facilitation of a child's development are also benefits of increased independent participation.

There are many ways families and school teams can use assistive technology to ensure early childhood literacy. The following are a few examples and resources that can be used to provide children with disabilities opportunities and experiences with books and other associated literacy activities.

Low/no Tech Solutions

- Create slant boards/book stabilizers by gluing low pile carpet to a large 3 ring binder, and use Velcro to anchor books to the carpeted surface
- Adapt commercially available lap trays to use as supports for positioning books
- PVC pipe can be used to create free standing book stands that can be used by physical and occupational therapists to support books during therapy sessions that focus on positioning and other motor activities
- Easel, rain gutter or chalkboard tray used as a book support
- Recycled materials like sheet packing foam, chip clips, large paper clips, sticky back foam, hot glue "dots" or soft Velcro can be attached to book page corners to "fluff" pages apart for easier turning
- Large heavy duty hair tie loops can be hot glued or taped to create handles on chubby book pages or pop up book pages

- Scan or copy book pages to enlarge or place in more user friendly format such as 3 ring binders with page protectors, laminate, or photo albums
- Enhance copied book pages with communication symbols, textures or home made 3-D props, use Velcro to attach props, symbols or textures to story boards or book pages
- Commercially available books that are enlarged or come with 3-D props can be found at www.lakeshorelearning.com or Constructive Playthings-www.constplay.com
- Create or make personalized books using photos placing them in photo albums with cardboard back pages, or 3 ring binders
- Add pictures or symbols to text to enhance story meaning
- Create ways to store books in open baskets with props to increase ease of independent access and choice
- Pool noodles can be used to position the child during play and reading activities

Mid Tech Solutions

- Program single repeated line stories using a single message communication devices like the BIGmack from AbleNet or the Chipper from Adaptivation
- Program simple short stories using a single switch sequential message communication devices like the Step by Step Communicator from AbleNet or the Sequencer from Adaptivation
- Single or sequential message devices can be activated by positioning a thin flat switch like the Pal Pad from Adaptivation behind the book that can be activated when the child presses on the page
- Create you're your own stories using talking photo albums available from a variety of sources
- The Book Worm from AbleNet can make almost any book a talking book, allows voice recording and alternate access to "listen" to the story
- Commercially available books on tape or CD, can be controlled by the child by using a single switch adapted cassette or CD player to start and stop the story. Head phones can also be used to enhanced listening

High Tech Solutions

- Create simple single switch or mouse click access stories using Microsoft PowerPoint Tutorial- http://atto.buffalo.edu/registered/Tutorials/talkingBooks/powerpoint.php
- Create your own books using My Own BookShelf by SoftTouch www.funsoftware.com . An authoring program that allows you to create books, and categorize them into bookshelves. Children can pick their books from the bookshelf and read using a variety of access devices
- Create your own stories using Intellipics Studio or Intellitools Classroom Suite, stories can be read utilizing a computer and Intellikeys, an alternative and customizable keyboard with overlays
- Explore commercially available multimedia story books for your computer such as Living Books from Broderbund, UKanDo Little Books from Don Johnston, or Mightybooks
- There are also many free books available to play and view on line. Some examples are www.storyplace.org, www.mightybook.com , or www.starfall.com

As you can see there are many low cost simple solutions available to adapt learning and play environments for children with disabilities. A continuum of strategies should be made available and customized according to a child's needs. A teams increased knowledge and awareness of tools available as well as a focused problem solving approach ensures access to literacy related activities for all children.
 For more information and links related to assistive technology visit Michigan's Assistive Technology Resource (MATR) website www.cenmi.org/matr or 800-274-7426
References and Resources

AbleNet, Inc. - 800 227-0216
www.ablenetinc.com
Switches, environmental controls, battery adapters, and light tech voice output devices

Adaptivation
http://www.adaptivation.com/homepage.htm
Switches, environmental controls, battery adapters, and light tech voice output devices

Books Made Easy! By Pati King-Debaun
Available from Creative Communicating (see vendors) Book adaptations for infants, toddlers and
Young Children of all abilities

Boston Public Schools Access Technology Center-Recipe for Adapting Books
http://boston.k12.ma.us/teach/technology/emmanuel.asp

Constructive Play Things
School supplies that often have features that can be helpful to young children with disabilities
www.constplay.com

Creative Communicating – 801-645-7737
www.creative-comm.com
Early childhood software with emphasis on emergent literacy, classroom support materials,
resource books and videos, workshops.

Don Johnston, Inc. – 800-999-4660
Switches, computer interfaces, software from early literacy to learning disabilities, resource books
www.donjohnston.com

Intellitools - 800 899-6687
Intellikeys, authoring software, curriculum software adapted to special needs, training workshops
www.intellitools.com

Lakeshore Learning Materials - 800 421-5354
School supplies that often have features that can be helpful to young children with disabilities
such as paint stamps with large handles or paint mitts, book props
www.lakeshorelearning.com

Let's Play! Projects
www.cosmos.ot.buffalo.edu/letsplay
The University of Buffalo model demonstration project that provides families with ways to play through the use of
assistive technology.

Linda Burkhart - www.Lburkhart.com
410 795-4561

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