Using AT to Promote Literacy in Infants and Toddlers

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Literacy is an ongoing process that begins at birth and develops throughout life. Infants and toddlers interact with the world to acquire the skills that will help them to eventually read, write, and communicate with others. These interactions may not occur easily for children with disabilities due to any number of limitations, such as restricted mobility, auditory or visual impairments, or difficulty using hands and arms. Luckily, AT can easily be used with literacy-promoting activities and routines to afford children with disabilities the same opportunities to develop these skills as typically developing children.

Early Characteristics of Literacy
Preliteracy is a stage of development when infants learn about the form, content, and use of language and literacy through early experiences. Children may acquire many different developmental skills concurrently, providing them with the ability to explore and interact with their environments more fully. For example, as a child physically develops, he or she gains the ability to hold eye gaze, turn over, and crawl. These abilities allow the child to explore the environment and interact with caregivers more as he or she gets older. This ability to explore furthers the cognitive development by helping the child gain more knowledge of the environment through varied experiences. Increased knowledge increases the complexity of the child’s understanding of events and sets the stage for literacy development.
Emergent literacy is built from the initial preliteracy stage when a toddler or preschooler develops literacy skills that will eventually lead to reading, spelling, writing and generating words independently. Progress at this stage includes greater vocabulary comprehension, oral language development, story comprehension and retelling, the awareness that print has meaning, the relationship between letters and sounds, the relationship between the speech sounds children hear and the sound patterns in words in books, and the progression from scribbling to writing letters and familiar words. These experiences bring meaning to reading and writing.

Why Promote Literacy in Infants and Toddlers?

Developing the skills needed to eventually read and write is a gradual process for children. The more they explore and develop more complex concepts about the world around them, as well as the role of language and print in daily life, the better prepared children are to later integrate reading and writing into their own lives. Adults should facilitate activities for a child to develop the skills gained in the preliteracy and emergent literacy stages rather than directly teach these skills.

Strong early childhood home literacy environments include the regular use of books and writing materials, language and vocabulary learned through adult-child interactions, opportunities for children to learn about people and activities, and high parental expectations for child literacy. These types of environments have been linked to improved literacy skills later in life.

Literacy development is influenced by a child’s interactions with adults, environmental characteristics, and cultural values and expectations for literacy. Unfortunately, children with disabilities may have limited opportunities to explore, interact with others, and read and write, and therefore, may not develop literacy skills. Light and Kelford Smith (1993)1 reported that families of children with severe disabilities ranked literacy as a less important priority than functional skill development. Conversely, families of typically developing children ranked literacy as more important than functional skill sets.

Incorporating Literacy into Activities

Because children’s abilities to listen, read, write, and communicate either through speech or AAC devices develop simultaneously it is important to embed these skills into different activities and routines throughout a child’s day. The best way for children to develop vocabulary, cognitive skills, and a feel for the rhythm and pattern of speech is for adults to speak with them conversationally and read stories aloud. There are many more ways to do this than shared book reading with your child at story time. Adults can direct children’s

Incorporating Literacy into Activities (continued)

Attention to spoken words, speech sounds, rhyming sounds, printed words, and letter names. This section provides ideas for how literacy promotion may be included in routines already familiar to a child.

Model reading and writing often for your child, whether it be writing a shopping list or reading a menu, and say aloud what you are reading or writing. Show them what you are writing on or reading. Talk about what you are doing while you and your child are engaged in an activity or routine to help your child develop an awareness for the sound and rhythm of language. Have your child “write” or draw you a story, to reinforce that there is a connection between writing and telling a story. Point out rhymes and make initial consonant sounds of words more pronounced. For hearing impaired children, use sign language whenever possible. For visually impaired children, model reading Braille (even if you do not know how to actually read Braille) by using books with both Braille and print.

Example: Play

Children’s blocks can be modified to have text and a picture, helping teach the child that the letters on the print correspond to the item in the picture. An example of these blocks may be seen below. Simply taping laminated photos and words onto the blocks adds another dimension to a child’s play. Older children may benefit from grouping similarly labeled blocks together to build more complex relationships between the concepts.

Example: Story time

Actively involve a child in storybook reading and relate the story to a child’s interests and personal experiences. Ask children open-ended questions, provide or request explanations of a story, or make predictions about different aspects of a story. Keep in mind the child’s cognitive abilities and make sure the questions and relationships made are developmentally appropriate (Dunst, Williams, Trivette, Simkus, & Hamby, 2012).²

Activities to Promote Literacy (continued)

Once your child is familiar with a story have him or her retell the story in their own words. You may also have your child make up a story based on the illustrations in an unfamiliar book or label parts of a picture in a familiar book.

Shared reading can be difficult for some children and families. To keep your child engaged during story time have them reenact parts of the story. For example, “From Head to Toe” by Eric Carle describes something an animal does, then asks if the child can do it: “I am a monkey and I can wave my arms. Can you do it?” Being interactive keeps a child who may not normally sit still for story time interested in the activity.

♦ Example: Running Errands

When out with your child take the opportunity to narrate where you are going and what you will do when you get there. Have them participate in any way possible, whether it be giving them the shopping list to hold while at the grocery store (to grasp the connection between print and objects), or read a menu at a restaurant.

How to Use AT in Literacy-Promoting Activities

For an AT device to be effective, children must find it to be motivating and engaging. Otherwise, the device is much more likely to be abandoned. AT is easily integrated into existing activities and routines to promote literacy development in children with disabilities. This section describes how some AT devices can be used to help children with disabilities participate more fully in literacy-promoting activities and routines.

- Some children may prefer to sit in a parent’s lap during shared book reading but others may require the use of positioning devices. Similarly, AAC and communication boards may be used for children to respond to adults’ questions and identify key words in the story. Children can use the devices to more fully participate in literacy-promoting activities.

- Each page of a book can be recreated on a computer to contain graphics, sounds, and movements that go along with the words. There are also websites (1, 2, 3) that host different books online with illustrations and text that allow children to move from page to page with the click of a mouse. There are also many iPad apps that recreate famous children’s books, a list of which can be found at http://digitalmediadiet.com/?p=1645.
How to Use AT in Literacy-Promoting Activities (continued)

♦ A slant board helps keep a book upright for a child. To make your own, hot glue felt or microfiber to the cover of a 3-ring binder or large piece of cardboard. The size of the binder or cardboard depends on how slanted you would like for the board to be. Then, attach a single piece of Velcro to the back cover of each of your child’s books. The book can be stuck to the board’s fabric with the Velcro to keep it in place. To use the slant board for drawing or writing, affix a clipboard to the fabric also by using Velcro, or use glue for a more permanent adaptation. Clip a piece of paper to the clipboard and see what your child creates!

♦ Page turners and page fluffers are used to make it easier for children to turn books’ pages. Page turners stick out from the side of each page and give a child something to grip while page fluffers sit at the bottom right corner of a page and keep the pages apart so that a child can more easily separate them. Many different materials can be used for these adaptations. Popsicle sticks, large paper clips, and index tabs work well as page turners while sponge pieces, dots of hot glue (after they dry!), buttons, and small craft pompoms are terrific page fluffers.

♦ **Visual supports** that pair text with pictures give your child the opportunity to make the association between the word, the picture on the card, and the activity it represents. The pairings of text and pictures is especially helpful for children with hearing impairments to learn the context and meaning of different words. Daily picture schedules or choice boards may be created for your child to select which songs they would like to sing or which books they would like to read. Be sure to verbalize what action comes next in a visual schedule and what choice the child made so that they can incorporate the sounds of the words with the text and picture.

♦ Programming a repeated line from a story (eg. “Brown Bear, Brown Bear, what do you see?”) into a BiGmack for a child allows the child to participate even if he or she cannot say the words by using a switch. It can also be programmed to say “turn the page” when the child is ready.
How to Use AT in Literacy-Promoting Activities (continued)

- A story box may be assembled for each of your child’s favorite stories. The perfect story for this type of AT is a simple one that refers to objects and concepts with which your child is familiar. To create your own story box, simply collect items that your child encounters naturally or around the house and put them into a box or bag along with the book (for ideas on what to include visit WonderBaby). You may even put a tactile marker on the outside of the box along with a label so that your child will be able to identify the box and learn to associate the feel of a marker with the words and concepts found in a given story. The ability to self-select and identify story boxes with tactile markers will help foster independent reading. As you read through the story with your child, present him or her with an item that corresponds with the words you are saying. Be sure to give only one object at a time so as to avoid overstimulation and confusion. As your child explores the object, be sure to describe it, give its name, and model its use if it has one (e.g. using a hairbrush, pretending to write with a pen, etc.). Your child may even want to act out the story with the items in the box. At the end of the story have your child clean up so that he or she knows the story is over. Clean up provides one last time to handle all of the objects.

- Tactile books are made either from scratch or adapted to fit existing books. When making a tactile book from scratch, work with your child to create a story, thus promoting oral language and conversation. Be sure to verbalize what you are typing or writing and get your child’s feedback. Ask your child questions about what comes next in the story or which characters should be involved. Once the story is composed, glue, tape, or velcro one or two different textures on each page to correspond with the story. If a cat is in the story cut out some furry fabric but don’t worry about details like a nose or eyes. Make sure that your child is familiar with the texture to avoid confusion and give it meaning. If your child is able, helping to color in pictures for the book or select materials to represent different objects throughout the story are two ways of encouraging participation. Bind the book together and read through it, making sure that your child touches each texture as you go. If modifying an existing book look at each page and decide what is most important in helping your child understand the story. Then, add a tactile element to the picture already in the book to highlight it. Again, including details is not as important as are the opportunities for your child to associate a tactile sensation with the item in the picture.
Children with disabilities may have vision, hearing, or movement limitations that may be accommodated or lessened by using AT to promote literacy participation and learning. Children may also have functional limitations in mobility, using their arms and hands, communication, socialization, or problem-solving/reasoning abilities that can limit their participation and learning of literacy skills. For example, children with visual impairments may not have the same opportunities as sighted children to accidentally pair a visual stimulus with the language they hear. Or children with limited hearing may be able to see an object but be unable to pair it with language that they do not hear. Special adaptations may be made to help children develop a deeper understanding of the world around them. For example, if a child only has a visual impairment, a well-developed tactile sense and hand strength will be necessary for future Braille reading. But, if the child also has a physical disability, more thoughtful adaptations or AT may be necessary for the child to learn to read. For example, literacy learning is likely to be multi-modal and combine specially designed visual stimuli with tactile and auditory stimuli. A touch-cue system may be a helpful way for the child to begin to understand their world and the objects and actions that are part of that world.

Story boxes are especially helpful for children with visual impairments who need to develop a keen tactile sense that will later be used to discriminate between letters when reading Braille. Opening the box also gives your child another way to develop the hand strength that is necessary for Braille reading.

Parents can modify existing pictures in books to be black and white with thick black lines. Or parents can be careful to select books with isolated pictures that have a high contrast with the background, such as Frida Bing’s series of high contrast books.
USEFUL WEBSITES

Center for Early Literacy Learning (CELL)
- Provides resources such as practice guides and reviews for parents, providers, and teachers to help children in various stages of literacy development.

American Foundation for the Blind
- Provides tips on how to promote literacy in children with impaired vision, such as how to create tactile books and adapt other materials to develop your child’s tactile sense.

Family Connect
- A website devoted to helping parents of all different age ranges of children with visual impairments.

Paths to Literacy
- Offers a basic overview of literacy as connected to various stages of development and special challenges for children with visual impairments.

TNT Helpdesk
- A searchable database with suggestions on how to create your own adaptations at home for any variety of challenges.

WonderBaby
- Great ideas for stories to use with a story box and what to include in your story box

Creative Communicating
- Provides tips for how to create literacy-rich environments for children and strategies for incorporating literacy into both the home and classroom.

Stories to Read Online
- A collection of links to web-based stories and accompanying activities for children of various ages.

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