

Speech & Language and Assistive Technology: The Non-Verbal Child

A) *Speech & Language Development:*

- Birth –One Year:

Hearing and Understanding	Talking
<p>Birth–3 Months</p> <ul style="list-style-type: none"> • Startles to loud sounds • Quiets or smiles when spoken to • Seems to recognize your voice and quiets if crying • Increases or decreases sucking behavior in response to sound 	<p>Birth–3 Months</p> <ul style="list-style-type: none"> • Makes pleasure sounds (cooing, gooing) • Cries differently for different needs • Smiles when sees you
<p>4–6 Months</p> <ul style="list-style-type: none"> • Moves eyes in direction of sounds • Responds to changes in tone of your voice • Notices toys that make sounds • Pays attention to music 	<p>4–6 Months</p> <ul style="list-style-type: none"> • Babbling sounds more speech-like with many different sounds, including <i>p</i>, <i>b</i> and <i>m</i> • Chuckles and laughs • Vocalizes excitement and displeasure • Makes gurgling sounds when left alone and when playing with you
<p>7 Months–1 Year</p> <ul style="list-style-type: none"> • Enjoys games like peek-a-boo and pat-a-cake • Turns and looks in direction of sounds • Listens when spoken to • Recognizes words for common items like "cup", "shoe", "book", or "juice" • Begins to respond to requests (e.g. "Come here" or "Want more?") 	<p>7 Months–1 Year</p> <ul style="list-style-type: none"> • Babbling has both long and short groups of sounds such as "tata upup bibibibi" • Uses speech or non-crying sounds to get and keep attention • Uses gestures to communicate (waving, holding arms to be picked up) • Imitates different speech sounds • Has one or two words (hi, dog, dada, mama) around first birthday, although sounds may not be clear

One – Two years:

Hearing and Understanding	Talking
<ul style="list-style-type: none"> • Points to a few body parts when asked. • Follows simple commands and understands simple questions ("Roll the ball," "Kiss the baby," "Where's your shoe?"). • Listens to simple stories, songs, and rhymes. • Points to pictures in a book when named. 	<ul style="list-style-type: none"> • Says more words every month. • Uses some one- or two- word questions ("Where kitty?" "Go bye-bye?" "What's that?"). • Puts two words together ("more cookie," "no juice," "mommy book"). • Uses many different consonant sounds at the beginning of words.

Two-Three Years:

Hearing and Understanding	Talking
<ul style="list-style-type: none"> Understands differences in meaning ("go-stop," "in-on," "big-little," "up-down"). Follows two requests ("Get the book and put it on the table"). Listens to and enjoys hearing stories for longer periods of time 	<ul style="list-style-type: none"> Has a word for almost everything. Uses two- or three- words to talk about and ask for things. Uses <i>k, g, f, t, d,</i> and <i>n</i> sounds. Speech is understood by familiar listeners most of the time. Often asks for or directs attention to objects by naming them. Asks why? May stutter on words or sounds

Three- Four Years:

Hearing and Understanding	Talking
<ul style="list-style-type: none"> Hears you when you call from another room. Hears television or radio at the same loudness level as other family members. Understands words for some colors, like red, blue, and green Understands words for some shapes, like circle and square Understands words for family, like brother, grandmother, and aunt 	<ul style="list-style-type: none"> Talks about activities at school or at friends' homes. Talks about what happened during the day. Uses about 4 sentences at a time. People outside of the family usually understand child's speech. Answers simple "who?", "what?", and "where?" questions. Asks when and how questions. Says rhyming words, like hat-cat Uses pronouns, like I, you, me, we, and they Uses some plural words, like toys, birds, and buses Uses a lot of sentences that have 4 or more words. Usually talks easily without repeating syllables or words.

Four- Five Years:

Hearing and Understanding	Talking
<ul style="list-style-type: none"> Understands words for order, like first, next, and last. Understands words for time, like yesterday, today, and tomorrow. Follows longer directions, like "Put your pajamas on, brush your teeth, and then pick out a book." Follows classroom directions, like "Draw a circle on your paper around something you eat." Hears and understands most of what is said at home and in school. 	<ul style="list-style-type: none"> Says all speech sounds in words. May make mistakes on sounds that are harder to say, like <i>l, s, r, v, z, ch, sh, th</i>. Responds to "What did you say?" Talks without repeating sounds or words most of the time. Names letters and numbers. Uses sentences that have more than 1 action word, like <i>jump, play, and get</i>. May make some mistakes, like "Zach got 2 video games, but I got one." Tells a short story. Keeps a conversation going. Talks in different ways depending on the listener and place. May use short sentences with younger children or talk louder outside than inside.

B) Potential Speech and language concerns associated with DCC:

- Social/Pragmatic Language
- Processing delays
- Receptive/Expressive language delay
- Apraxia (motor speech dis order)
- Speech Fluency

C) Research on the Use of AAC for the Minimal and Non-Verbal Child

- Research studies have consistently shown that introducing alternative forms of communication does not reduce speech attempts and in some cases may increase speech attempts and improve speech production.
- “Results indicated that AAC interventions do not impede speech production.”
- “For very young children, the use of AAC does not appear to hinder speech development. In fact it may enhance the development of spoken communication”

Millar, Light, Schlosser, JSLHR April 2006

Schlosser, Wendt, JSLP August 2008

Romanski, Sevcik, Infants & Young Children July-Sept 2005

D) Categories of Communication Aids/Supports:

- No Tech,
- Low Tech,
- Mid Tech,
- High Tech

E) No Tech Communication Systems:

- No Tech-
Any communication system that does not require a power source.
- For example: Sign language, eye gaze systems, object choice boards, PECS systems picture communication boards and, partner assisted scanning.

Picture Exchange Communication System (PECS)

- PECS provides students opportunities to **initiate** a request by physically giving a picture symbol to a communication partner.
- PECS develops into constructing sentences and then moves to commenting and answering questions
- Typically used with children with autism

F) Low Tech Communication Systems:

- Any communication system that requires a simple source of power and is very easy to program.
- Big Mack, Randomizer, Step-by-Step, Big Talk Triple Play, Take and Talk, I Talk 2 & 4

G) Mid tech Communication Systems:

- Any communication system that requires a power source and requires some level of training to adequately program and maintain the device.
- Go Talk 9/20, Tech Talk/Scan, Communication Builder, Quick Talk 23

H) High Tech Communication Systems:

- Any communication system that requires a power source and extensive training to competently program and maintain the device. Typically a dynamic display system.
- NovaChat 5/7/10, Tobii, iPad and communication apps, Accent 700/1000/1200

I) iPad Communication Apps:

Touch Chat/Word Power
Proloquo2Go
Sounding Board
Go Talk Now
Sono Flex
LAMP: Words for Life

J) Implementing Communication Boards/Systems:

You must **teach** the student the vocabulary on any board... But how?

1. **Model** vocabulary as you introduce and carry out an activity (Aided Language Stimulation/Augmented Input)
2. Allow the student to **explore** the vocabulary
3. **Acknowledge** student's selections during the activity whether they are right or wrong.
4. **Expand** on the student's communicative attempts both verbally and with picture symbols

K) Core-Fringe Vocabulary:

Core Vocab:

- Small # of high frequency words
- Applicable in all environments
- Includes a variety of parts of speech
- Approximately 80% of single message words in a 100 word sample will be CORE words

Fringe Vocab:

- Large # of low frequency words
- Applicable to limited environments
- Includes mostly proper names and other nouns
- Approximately 20% of the words in a 100 word sample will be fringe words.

L) *Aided Language Stimulation/Partner Augmented Input:*

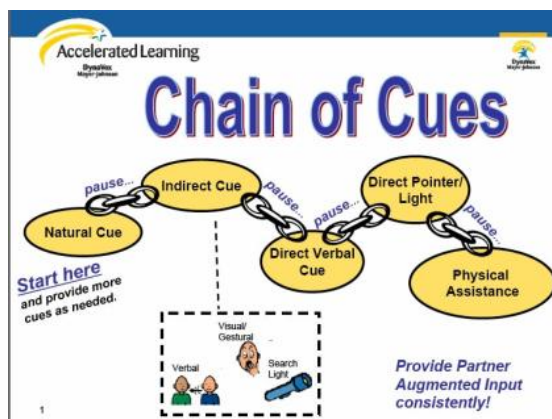
- The facilitator points out symbols on a communication display in conjunction with his/her ongoing verbal stimulation
- Students are inundated with seeing picture symbols being used frequently
- Benefits are not limited to the non-verbal students
- May assist some children in the acquisition of reading skills
- Pictures are color coded based on 5 based on the Fitzgerald key

M) *Common Interaction Patterns between Adults and Children:*

Research has shown when using AAC to participate in activities adults frequently dominate interactions by:

- Asking a high number of closed –ended questions
- Taking the majority of conversational turns
- Providing few opportunities for children to initiate or respond
- Controlling the direction and topic of conversation
- Focusing on the AAC system during the interactions
- Frequently interrupting the utterances of children

N) *Prompt Hierarchy:*



O) *Switches:*

- ▶ Large jelly bean
- ▶ Spec switch
- ▶ Grip switch
- ▶ Pillow switch
- ▶ Pal Pad
- ▶ Toggle switch

P) *Additional assistive technology tools:*

- ▶ Power Link
- ▶ Switch Latch Timer
- ▶ All Turn It Dial
- ▶ Jelly Beamer
- ▶ Adapter Mouse

Q) *Websites:*

- ▶ <http://tarheelreader.org/>
- ▶ <http://www.helpkidzlearn.com/games.html>
- ▶ <http://www.storylineonline.net/>
- ▶ www.boardmakershare.com
- ▶ www.enablingdevices.com
- ▶ www.ablenetinc.com
- ▶ www.augresources.com
- ▶ www.rjcooper.com
- ▶ <http://www.setbc.org/pictureset/Default.aspx>