

**ALLEN CROCKER
SPEAKER SERIES
LECTURE**

AUGMENTATIVE COMMUNICATION

Strategies and tools to support the speech,
language, and social development in
individuals with Down syndrome

Goal

- *Facilitate clear, intelligible speech**
- *Support language growth & expansion**
- *Foster social interactions**
- *Decrease frustration**

Augmentative Communication

***Communication tools and strategies used to supplement speech or other natural communication methods.**

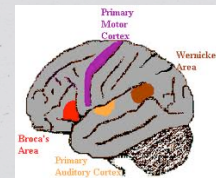
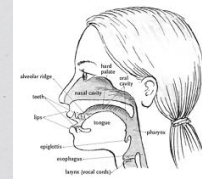
***Total communication approach: Speech, signs, pictures, gestures, voice output devices**

Speech, language, communication

*Speech- sound production

*Language- complex, rule-based system of expressing ideas

*Communication- means of sending and receiving information



Speech & Language: Down syndrome

- *Generally delayed acquisition of speech**
- *Reduced speech intelligibility**
- *Specific impairment in syntax development**
- *Proclivity for gestures and signs**
- *Relative strength in vocabulary acquisition**

Impact of hearing loss

- *Recurrent ear infections
- *Mild to moderate hearing loss
- *Impact on auditory awareness, speech



**Children will hear a word 2000 times
or more before they uses it in speech**



Comprehension & Expression

*My child understands so much
more than he/she can
communicate

Unique language development: *Down syndrome*

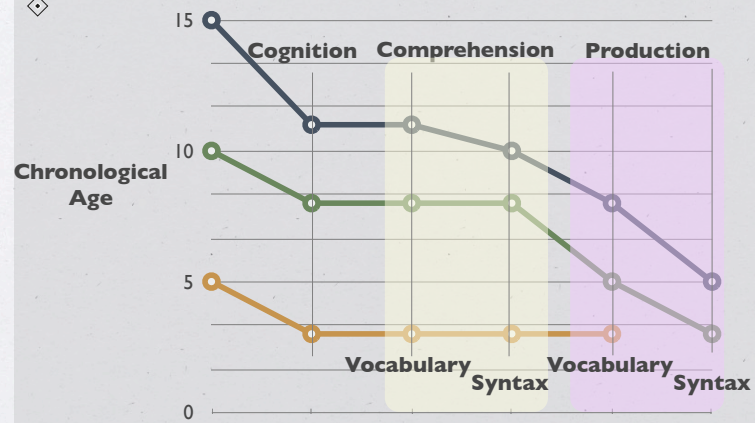


Chart adapted from Miller, et. al (1999)



Comprehension

Expression

Underestimation of skills

PART II

***Communication profile**

***Communication interaction style**

***AAC strategies**

***Other technologies**

Communication Profile:

Emerging communicator

- * Few to no word approximations
- * May or may not be using signs, conventional gestures
- * Most wants/needs are met through the anticipation of the caregiver and routines
- * Social interactions consist of physical social games (e.g., peek-a-boo, smiling, joint attention)

Early Intervention

***Children with Down syndrome often do not use speech until 3-5 years of age....**

***HOWEVER, they are capable of learning signs to represent word concepts by 10-12 months of age**

Benefits of Early Intervention

- *Prevent children from falling behind their peers**
- *Prevents the development of “learned passivity”**
- *(Light, 2010) Shown to increase turn-taking skills, participation, vocabulary acquisition, and the development of play**

Interaction styles to promote speech and language

***Offer increased input**

***Self/parallel talk**

***Pair speech with gestures, visual referents**

Interaction styles to promote speech and language

- *Develop routine spoken or signed communication interactions**
- *Reduce rate of speech**
- *Co-active movement and songs**

Unaided Communication Strategies:

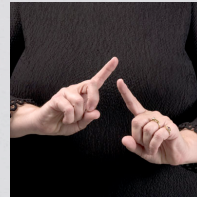
Sign Language

*Portable, spontaneous, multi-modal

*Reinforces basic language concepts

*Vocabulary growth

*www.signingsavvy.com



Aided Communication Strategies

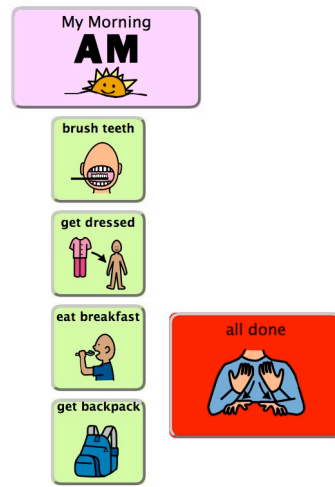
Supporting comprehension with pictures

*Visual schedules

*Ease transitions

*Increase
comprehension





*Encourage
independence







Aided Communication Strategies

Supporting comprehension with pictures

*First-then boards

First	Next	Then
		
take a bath	put on your pajamas	read a book
		

First	Then			
				
work	computer			
				
5	4	3	2	1

Aided Communication Strategies

Expressive use of pictures

*Use of photographs or picture communication symbols for making simple choices



*Symbols vs. photos

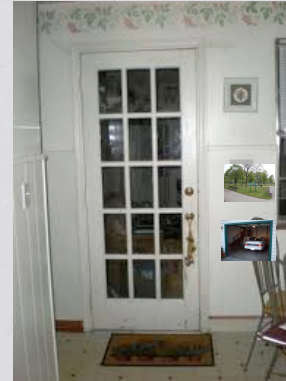
*Introduce in the context of routines

*Considerations



Aided Communication Strategies

Enrich the environment



Aided Communication Strategies

Picture-resources

- * www.seeandlearn.com, “First Word Pictures”
- * Boardmaker software, free 30-day trial, www.mayer-johnson.com/boardmaker



Aided Communication Strategies

Picture-resources

* www.visualaidesforlearning.com, visual schedules, vocabulary organized by category

* www.google.com/images

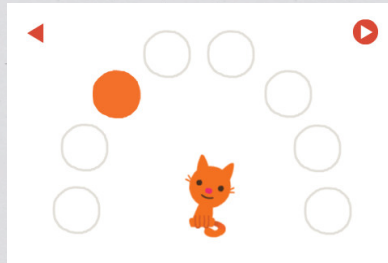


Aided Communication Strategies

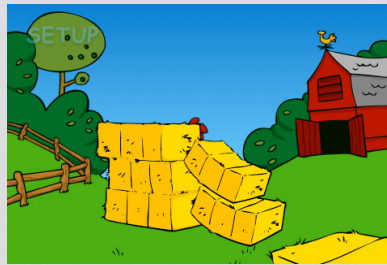
iPad applications for the emerging communicator

- *Highly motivating platform for learning and exploration**
- *Establishing causal relationships**
- *Refining distal point/selection techniques**

Boogie Bopper



Peekaboo HD



Alpha Baby



Communication Profile:

Developing communicator

- * **Speaks primarily in 1-2 word phrases**
- * **Tendency to use mostly nouns**
- * **Uses multiple communication strategies including sign language and some use of pictures for expressive communication**
- * **Wants/needs are met through a combination of precise messages and communication partner interpretation**

Interaction styles to promote speech and language

- *Model expanded speech models**
- *Use more open-ended questions**
- *Continue to model slow speaking rate**
- *Touch cues to elicit more precise speech
production**

Unaided Communication Strategies:

Touch Cues

- *Children with Down syndrome learn best through visual models**
- *Touch cues offer consistent gesture that is related to the manner in which the sound is made**
- *Provide children with additional sensory feedback and heightened awareness**

Aided Communication Strategies

Advanced picture communication strategies

- *Establish more independent picture communication strategies**
- *Use of a portable picture communication book**
- *Supplement to spoken and/or signed language**

Aided Communication Strategies

Language characteristics of children with DS

- *Shorter phrase length
- *Difficulty learning word order and the relationship between words (syntax)
- *Slower acquisition of more abstract elements of language such as verbs, adjectives, and prepositions

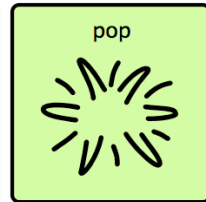
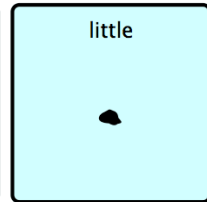
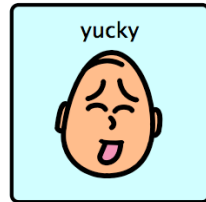
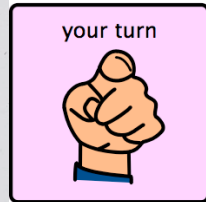
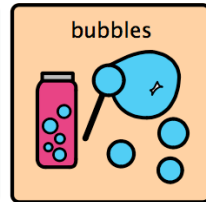
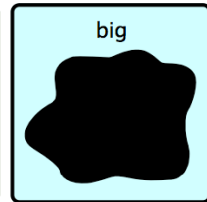
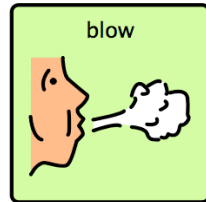
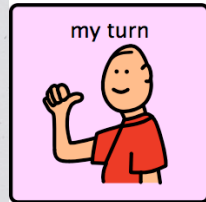
Aided Communication Strategies

Expanding language through topic displays

- ***Topic displays: picture board related to one activity, contains multiple elements of language**
- ***Using picture *ONLY* for basic choice-making = communication dead end**
- ***Expand language beyond requesting and facilitate visual support for sentence building**

Aided Communication Strategies

Expanding language through topic displays



Aided Communication Strategies

Voice Output Tools

- *Voice output offers the child a “speaking role”**
- *It may increase the child’s motivation to communicate or understanding of the communication intent**
- *It offers multi-modal input/output, can increase speech production**

Aided Communication Strategies

Voice Output Tools

Static



Dynamic-dedicated



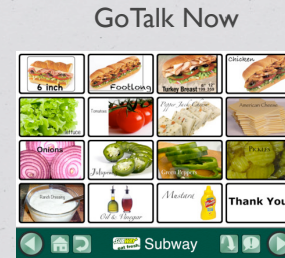
Dynamic-nondedicated



Aided Communication Strategies

iPad applications for the developing communicator

* Simple (lower cost) communication applications



Aided Communication Strategies

iPad applications for the developing communicator

*Comprehensive
(and higher cost)
communication
applications

*TouchChat Suite



Aided Communication Strategies

iPad applications for the developing communicator

*Sono Flex



Aided Communication Strategies

iPad applications for the developing communicator

*Proloquo2Go



Communication Profile:

Refining communicator

- * **Generally speaks in 3-4 word utterances**
- * **Speech is generally intelligible, when the context is known**
- * **Uses more varied language elements including verbs and adjectives, may still omit functor words such as articles**
- * **Social interactions are more sophisticated and advanced**

Interaction styles to promote speech and language

- *Encourage organized retell of past events,
model chronologically sequenced personal
stories**
- *Encourage use of descriptive concepts**
- *Continue to model slow speaking rate**

Natural (Unaided) Communication Strategies:

Pacing

- *Reduce rate of speech
- *Support distinct production of single words (reduce co-articulation)
- *Physical and/or visual support



Aided Communication Strategies

Visual support for clarifying speech

A	B	C	D	Starts with	
E	F	G	H	new word	
I	J	K	L	M	N
O	P	Q	R	S	T
U	V	W	X	Y	Z

Guess what I'm talking about...

person 	place 	transportation 	it is... [color] 	it happened...
animal 	book/story 	clothes 	it is... [shape] 	you use it to
food 	drink 	music/TV 	it is... [size] 	you can find it in... [place]
school 	home 	sports 	ask me yes/no questions 	starts with...

yes no stop/again

Aided Communication Strategies:

Narratives

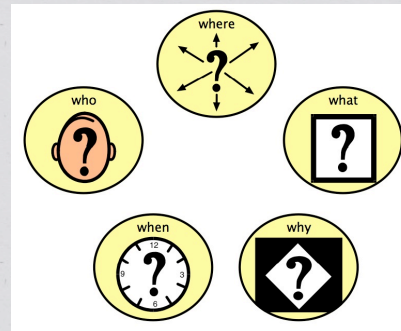
- *Social interactions at this communication level are largely based on the ability to share personal narratives (e.g., recall past events, share information, etc.)**
- *Use visual supports to organize and elaborate personal narratives to improve social interactions**

Aided Communication Strategies:

Personal narratives

*Visual supports to
encourage
organization

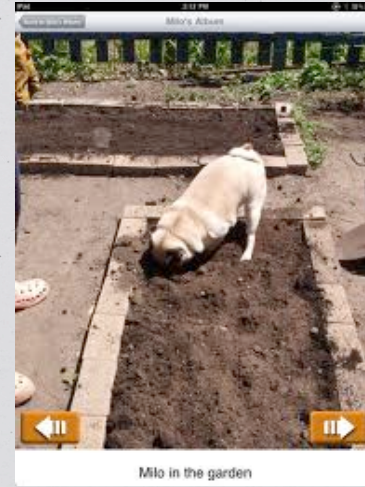
*Concept maps



Aided Communication Strategies

Narrative Development: Personal

Click
n'
Talk



Aided Communication Strategies

iPad applications for the “refining” communicator

Pictello



Conclusion

***Total communication**

***AAC can supplement and support varying communication abilities, across the lifespan**

***Match features of tools/strategies with child's unique needs**

***Thank you to the families who
have allowed me to share their
child's communication
successes through videos today**

Selected References

- Chapman, R., et al., (1998). Language Skills of Children and Adolescents With Down Syndrome: II. Production Deficits. *Journal of Speech, Language, and Hearing Research*, 41, 861-873.
- Clibbens, J. (2001), Signing and lexical development in children with Down syndrome. *Down Syndrome Research and Practice*, 7, 101-105.
- Kumin, Libby. (2003). *Early Communication Skills for Children with Down Syndrome*. Bethesda, MD: Woodbine House.
- Light, J. & Drager, K. (2010, November). Effects of Early AAC Intervention for Children with Down Syndrome. ASHA Convention, Philadelphia, PA.
- Miller, Leddy, & Leavitt. (1999). *Improving Communication of People with Down Syndrome*. Baltimore, MD: Paul H. Brookes Publishing Co.

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