



**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.**

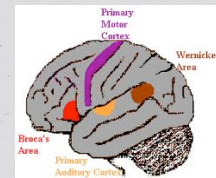
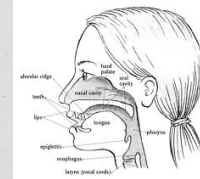
**\*Total communication approach: Speech, signs, pictures, gestures, voice output devices**

# 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*

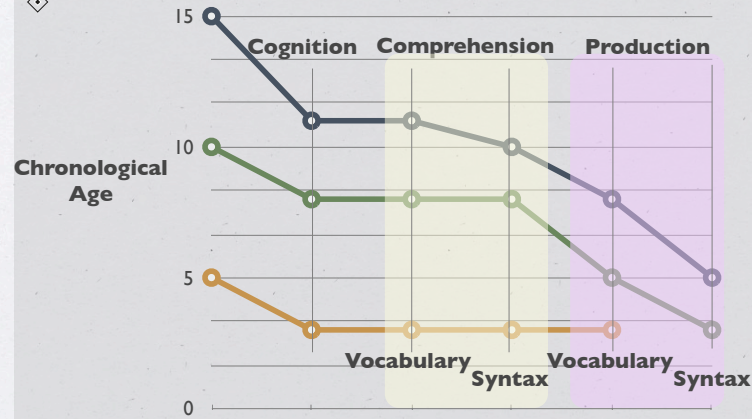


Chart adapted from Miller, et. al (1999)



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:

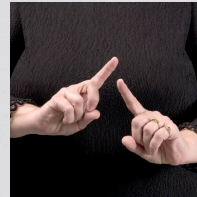
*Sign Language*

\*Portable, spontaneous, multi-modal

\*Reinforces basic language concepts

\*Vocabulary growth

\*[www.signingsavvy.com](http://www.signingsavvy.com)



# Aided Communication Strategies

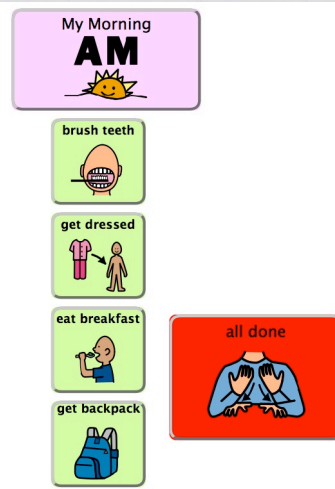
*Supporting comprehension with pictures*

\*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*

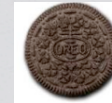
\*Use of photographs or picture communication symbols for making simple choices



\*Symbols vs. photos

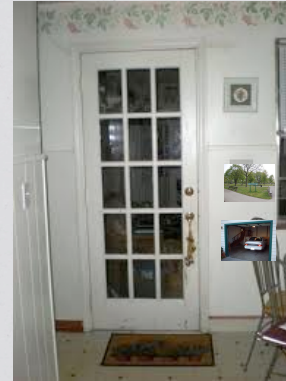
\*Introduce in the context of routines

\*Considerations



# Aided Communication Strategies

*Enrich the environment*



# Aided Communication Strategies

## *Picture-resources*

- \* [www.seeandlearn.com](http://www.seeandlearn.com), “First Word Pictures”
- \* Boardmaker software, free 30-day trial, [www.mayer-johnson.com/boardmaker](http://www.mayer-johnson.com/boardmaker)



# Aided Communication Strategies

## *Picture-resources*

\* [www.visualaidesforlearning.com](http://www.visualaidesforlearning.com), visual schedules, vocabulary organized by category

\* [www.google.com/images](http://www.google.com/images)



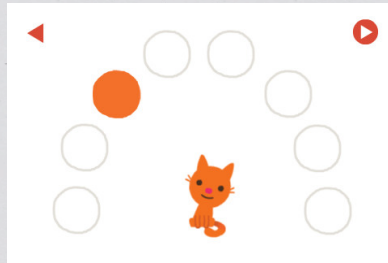


# **Aided Communication Strategies**

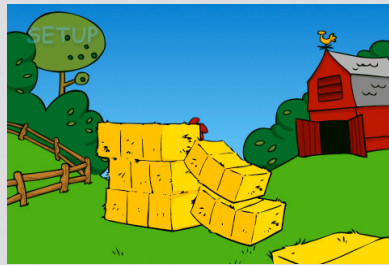
*iPad applications for the emerging communicator*

- \*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**

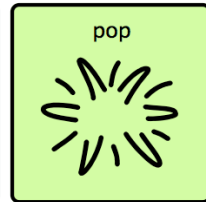
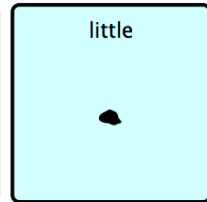
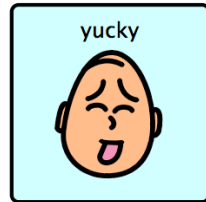
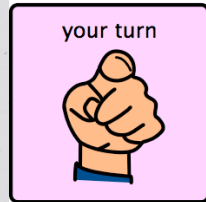
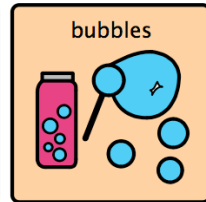
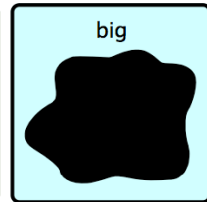
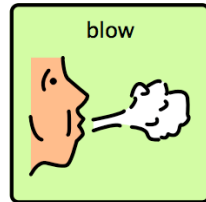
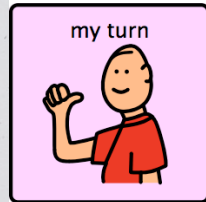
*Expanding language through topic displays*

- ◆ \***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

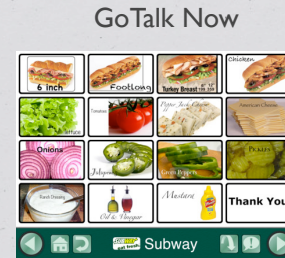
## *Voice Output Tools*



# 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*

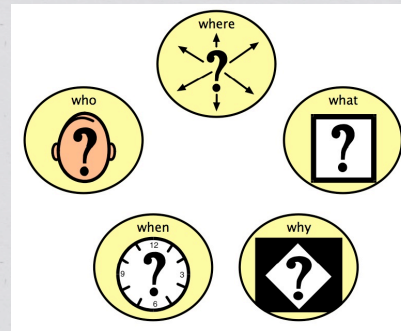
- \*Social interactions at this communication level are largely based on the ability to share personal narratives (e.g., recall past events, share information, etc.)**
- \*Use visual supports to organize and elaborate personal narratives to improve social interactions**

# Aided Communication Strategies:

*Personal narratives*

\*Visual supports to  
encourage  
organization

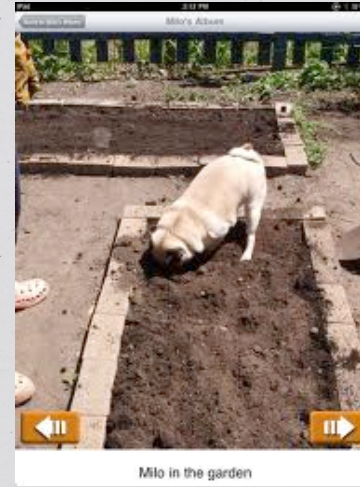
\*Concept maps



# 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

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- 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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