

 PennState 

Supporting Literacy Instruction for Individuals with Complex Communication Needs

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Teaching reading and writing
is the most powerful thing we can do
for individuals who use AAC
(Lindsay, 1989)

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5 stories

- Jackson
- Krista
- Anna
- Tiffany
- Bren

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5 key language and literacy skills

- Strong language foundation
- Sight words
- Letter sounds and decoding
- Comprehension
- Spelling

4

Jackson

- 16 months
- Down syndrome
- Very energetic

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5 Key Teaching Ideas

1. **Make instruction meaningful and motivating**
2. Provide sufficient time for instruction
3. Target appropriate language and literacy skills
4. Use effective instructional procedures
5. Provide adaptations to support participation

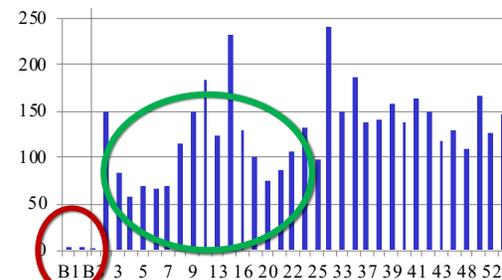
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5 key language and literacy skills

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- Spelling

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Frequency of turns expressed by Jackson at baseline & during intervention (15-37 months)



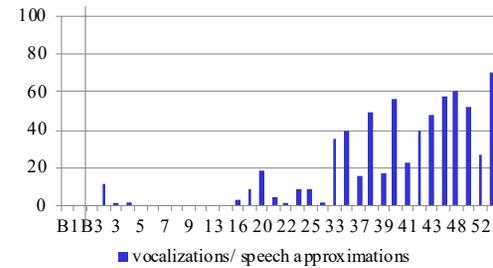
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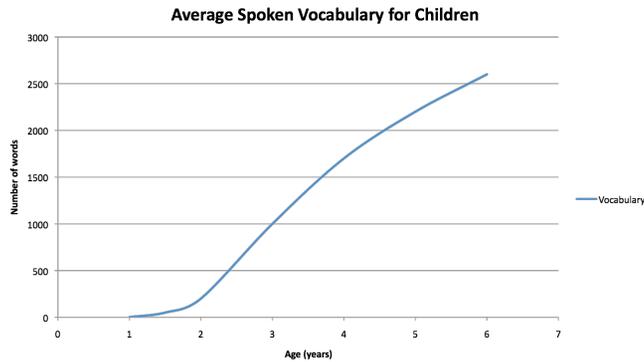
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% of turns communicated via speech by Jackson



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Language growth

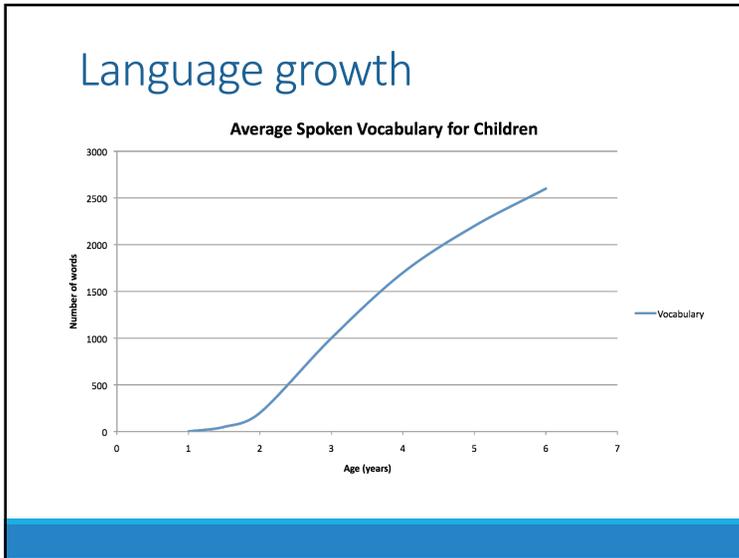


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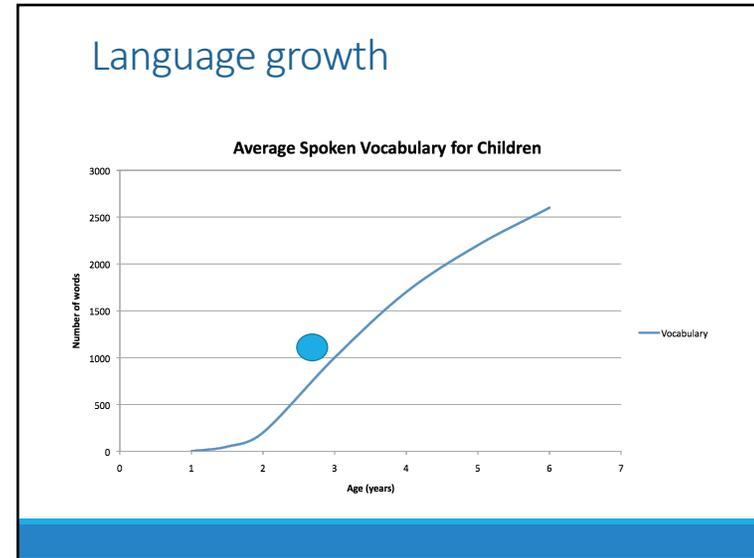
Jackson – 2 years 9 months

- Acquired >1,000 words
- Expresses 45-80 different concepts in 20 minutes of interaction
- Typically uses single words
 - Increased use of 2-3 word combinations
- Navigates aided AAC system independently

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Krista

- 8 years old
- Tracheotomy
- Vision and hearing impairment
- Limited fine motor skills
- Communication
 - Sign approximations & gestures
 - AAC device with limited vocab
- Non-literate
 - History of failure & low expectations

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5 key language and literacy skills

- Language base
- Sight words
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- Comprehension
- Spelling

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I went on a boat with dad.

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I hit the ball with mom.

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Mom, dad, and I went on a train.

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Use effective instructional procedures: Explicit instruction

Learner should
always be at 80%
correct or higher

- **Introduce** the task
- **Model** (*I'll show you*)
- **Guided Practice** (*Let's do one together*)
- **Independent Practice** (*Now it's your turn*)

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Guided Practice: Support for success from the very beginning



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Adapt instruction to meet complex needs

visual impairment

- Provide large print
- Provide color contrast



hearing impairment

- hearing aids
- augmented input
 - speech + sign or writing
- visual cues



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Adapting instruction to meet complex needs

Support comprehension & language skills

- written words, pictures, & sign
- Start with familiar, high interest concepts
- Teach new language concepts in context as required

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5 key language and literacy skills

- Language base
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5 key language and literacy skills

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- Comprehension
- **Spelling**



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Krista, 9 years old

After 55 hours of instruction

- Language base: Growing vocabulary
- Sight words: 60+ words
- Letter sounds and decoding: 19 letters
- Comprehension:
- Spelling: short words

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Anna

- 3 years, 10 months
- Autism
- Signs and PECS

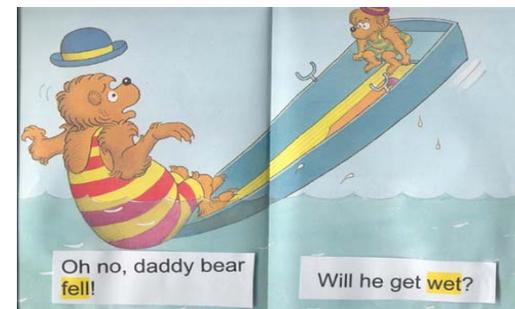
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Anna

- Language base:
- Sight words:
- **Letter sounds and decoding:**
- Comprehension:
- Spelling:

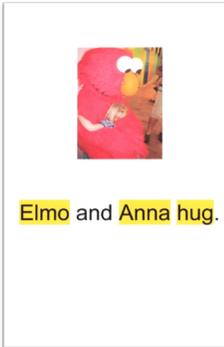
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Shared reading of adapted storybooks



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Personalized book for shared reading Gradually target more words



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Anna

- Language base:
- Sight words:
- Letter sounds and decoding:
- **Comprehension:**
- Spelling:

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Ensure basic comprehension skills “Max naps”

STUDENT READS THE TEXT
ILLUSTRATION IS COVERED

STUDENT SELECTS THE PICTURE THAT
REPRESENTS THE MEANING FROM CHOICES



Max naps.

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Book “Mickey gives Minnie a kiss”



Mickey gives Minnie a
kiss.

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Anna

- Language base:
- Sight words:
- Letter sounds and decoding:
- Comprehension:
- **Spelling:**

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Case Study: Tiffany

- 22 years old
- Attends a post-high school educational program
- Down syndrome
- Recognizes less than 10 sight words

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Tiffany

- Language base:
- **Sight words:**
- Letter sounds and decoding:
- Comprehension:
- Spelling:



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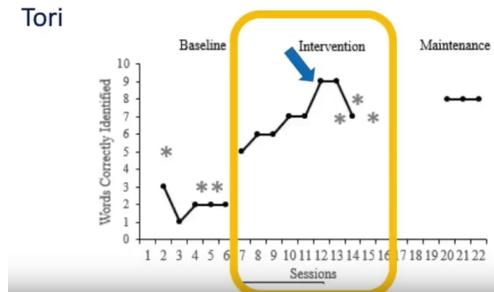
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Visual Scene Displays with T2L

Visual Scene Displays

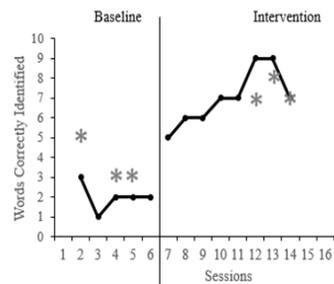
Video Visual Scene Displays

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Results



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1. Make instruction meaningful & motivating

- Include student interests
- Include motivating words and topics
- Ensure success

Individualized Word Lists

<p>JE</p> <ul style="list-style-type: none"> • Washer • Wrench • Harrow • Hoop • Camping • camo 	<p>KB</p> <ul style="list-style-type: none"> • Shrek • Spikes • Gym • Goal • Music • medal 
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How you do make it meaningful?

- **Make connections to the interests and goals of the learner.**
 - “We are going to learn about the sounds that letters make. This will help you learn to read about minions, and to look for videos of minions on YouTube.”
- **Create activities with high-interest word**
 - Letter-sounds cards, books

m



minions

 Silo	 Sprayer
 Straw	 Seeder

S

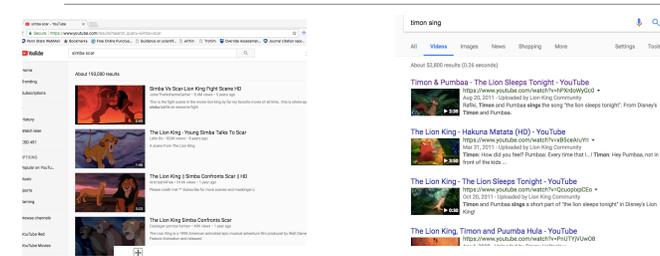
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2. Provide sufficient time/trials for instruction

- Provide focused instruction at least 5 days per week
- Start with short sessions; gradually increase the length
- Set clear expectations; use visual supports as required
- Practice new skills repeatedly; review acquired skills

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“Simba and Scar” “Timon sing”



Simba	Scar	and
Timon	Pumbaa	dance
Woody	Buzz	fight
Spongebob	Shrek	sing

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Literacy Session – Example

EARLY SESSIONS

- Sight words (5 minutes)
- Letter sound book (5 minutes)
- Shared reading book (5 minutes)

AFTER SOME SUCCESS AND RAPPORT BUILT

- Shared reading – with familiar books and words (5 minutes)
- Sight words (5 minutes)
- Letter sound book & direct instruction (15 minutes)
- Shared reading – with new books/words (5 minutes)

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Effects of T2L Software on the Sight Word Recognition Skills of Young Children with Developmental Delays

Suz Boyle
Salena Babb
David McNaughton
Janice Light
Pennsylvania State University

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Participants

- Six dyads of preschoolers
- One with developmental delay
 - One who is typically developing



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What were we trying to teach?

Sight word recognition

Participants with developmental delays are asked to match a sight word to one of four pictures

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Instruction: I Spy (with visual scene displays)



Where is the pig ?

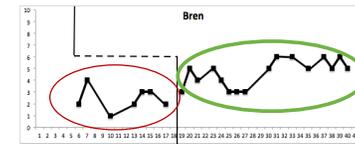


Where is the pig ?

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Results

- All children with disabilities made gains
- All children without disabilities made gains
- All children enjoyed the activity and wanted to continue
- All teachers described the activity as appropriate



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3. Target key language and literacy skills

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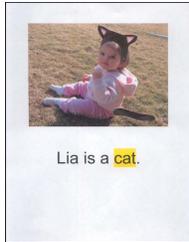
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Ellie

- Young girl with cerebral palsy
- Attends grade 1
- Knows some letter sound correspondences

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Personalized story book for Halloween



Shared Reading

LIGHT & MCNAUGHTON, 2015

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Communication display for decoding during shared reading



Shared Reading

LIGHT & MCNAUGHTON, 2015

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4. Implement Effective Instruction

- Teach basic skills using explicit instruction
- Provide opportunities to apply skills in meaningful literacy activities

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How does the student participate?

- Letter-sound knowledge is traditionally taught by
 - presentation of a printed letter and
 - the learner saying the sound the letter makes



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How does the student participate?

- The learner will:
 - listen to a target sound presented orally
 - identify the letter that represents the sound
 - select the appropriate letter from
 - a group of letter cards,
 - an alphabet board, or
 - a keyboard with at least 80% accuracy

s

a

m

65

dog



diesel



dolly



d

66

Model (“I do”)

- The instructor demonstrates the letter sound correspondence for the learner.
- “I am going to say a sound”
- “I want you to listen to the sound, and point to the letter that makes that sound”
- “Watch, I will show you”

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Guided practice (“We do”)

- The instructor provides scaffolding support or prompting to help the learner match the letter and sound correctly.
- Move from 2 choices to 4
 - Start with very dissimilar letters as foils
 - The instructor gradually fades this support as the learner develops competence.

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Independent practice (“You do”)

- The learner listens to the target sound and selects the letter independently.
- The instructor monitors the learners responses and provides appropriate feedback.

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How does the student participate?

- The learner will:
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 - identify the letter that represents the sound
 - select the appropriate letter from
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s

a

m

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Data Collection Form

Assessment and Instruction in Sound Blending, Phoneme Segmentation, Letter-Sound Correspondences, Single Word Decoding, and Sight Words

Learner's name: Jamal Circle one: Assessment
 Date: 11-4 Baseline
 Instructor: Jackie Instruction Guided Practice
 Target skill: letter-sound p.1 of a Instruction Indep. Practice

new letter - sound: s
 review letter-sounds: a, m, t

Trial	Target	Choices provided				+/-
		Choice 1	Choice 2	Choice 3	Choice 4	
1.	s	a	s	c	t	+
2.	m	n	w	m	k	+
3.	s	s	m	u	f	+
4.	s	y	i	x	s	+
5.	a	a	e	v	m	+
6.	s	z	r	s	h	-
7.	s	l	o	g	s	+
8.	s	b	e	o	n	+
9.	t	d	p	t	n	+
10.	s	w	q	e	s	-

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5. Modify the activity to support participation

- The learner will:
 - scan/look at all pictures and text cards
 - identify the word that “matches” the picture
 - respond by selecting the appropriate picture or text card

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5. Modify the activity to support participation

4 pictures & target word as text	4 text cards & target word as a picture

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5. Modify the activity to support participation

Low-tech eye gaze frame

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Literacy supports

- AACkids.psu.edu
- AACliteracy.psu.edu
- AAC-learning-center.psu.edu
- RERC-AAC.org
- ALL literacy curriculum (Tobii-Dynavox)
- SnapScene (Tobii-Dynavox)




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Thank you to...

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- the researchers and software developers at Invotek and Tobii-Dynavox
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Literacy

Reading isn't important because it helps you get a job. It's important because it gives you room to exist beyond the reality you're given. Reading make the world better. **It is how humans merge. How minds connect.** Dreams. Empathy. Understanding. Escape. Reading is love in action.

Matt Haig