

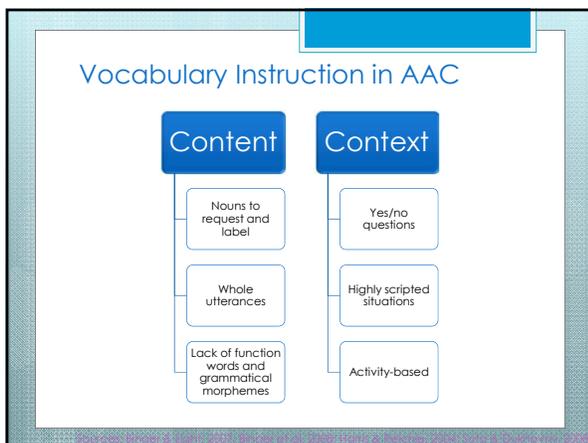
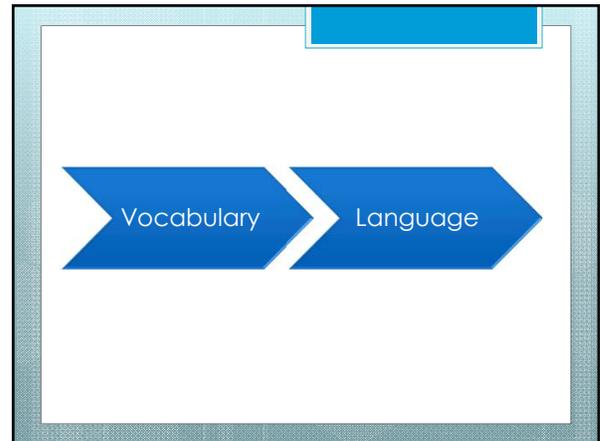
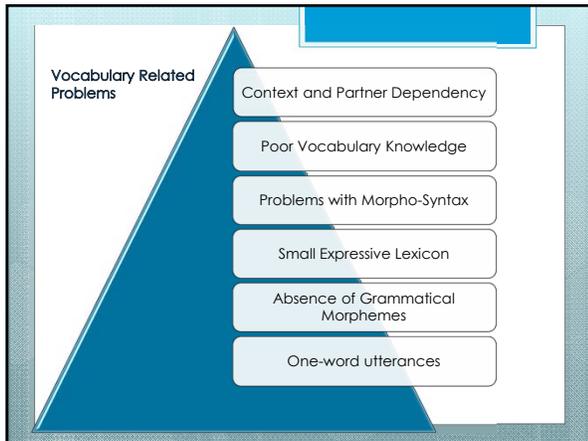
## Supporting Vocabulary Development in Students Who Use AAC: Practical Approaches for Educators and Speech-Language Pathologists

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Ph.D., CCC-SLP  
Nova Southeastern University

Children who use AAC experience numerous vocabulary-related difficulties

e.g., Binger et al., 2011



### Activity-based Vocabulary

• What can you say?

badger	hedgehog	porcupine
jackal	grizzly bear	shark
goat	moose	hare
bat	armadillo	bird
owl	cat	weasel

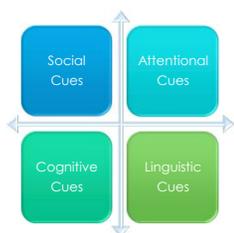
## Limitations of Activity-based Vocabulary

- 1) Does not reflect how children talk naturally
- 2) Limits reasons to communicate
- 3) Perpetuates being a responder not an initiator
- 4) Does not promote linguistic communication

No evidence of differences in developmental **sequence** or operating **principles**

National Joint Committee for the Communication Needs of Persons with Severe Disabilities (NJC) and NIH Panel (Tager-Flusberg et al., 2009)

## How children learn new words?



## Attentional Cues

- Children map word to meaning through association of the most frequently word used to the most salient referent (e.g. Xu)

## Cognitive Cues

- Cognitive assumptions that children make in early word acquisition help children narrow the possible meaning of a word (e.g., reference, extendibility, whole object bias, novel name-nameless categories) (e.g. A. Gopnik)

- In learning new words children tend to be guided by abstract conceptual knowledge.
- The child wants to make SENSE of the activities in which s/he takes part (Nelson, 1996): space, time, causality, objects and possession.
- Sense making takes place in a social world: Understanding the intentions and actions of others. (Tomasello 2003).

## Social/Pragmatic Cues

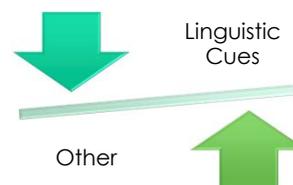
- Adults talk about objects, actions and events that children are focused on, thereby producing language that is relevant to the child's interests (L. Bloom).
- Children use social cues to interpret what the communication partner intends to mean (Tomasello).

## Linguistic Cues

- Children at different ages differ in their patterns of word learning (Bloom, 2003):
  - Beginning communicators tend to learn words that refer to entities, properties and actions that are accessible to them through observation of the material world and attention to the intentional acts of those around them.
  - Through hearing words in the context of sentences (i.e., comprehension), they learn that order and form matters and begin to draw meaning cues from syntax.

- This is a FEP
- These are FEPS
- This is FEP
- John FEPS
- This thing is FEPPY
- The dog is FEP the table

As children develop, some cues weight more heavily than others.



## From Lexicon to Grammar

- The first words children learn include exemplars from almost all the major parts of speech from adult language (Lahey & Bloom, 1977; Tomasello, 2003):
  - general nominals: cup, shoe, dog
  - specific nominals: names of family members...
  - action words: jump, run, eat
  - personal-social words: bye-bye, thank you
  - modifiers: cold, wet
  - pronouns: mine
  - function words: and, of

## EARLY Word Learning in AAC: Putting it all together

- It is not about vocabulary lists. It is about EXPERIENCE and PARTICIPATION with true communicative responsibility;
- The process of early word learning changes in the course of development:
  - From expressing own intentions to understanding others';
  - From highly referential to **conversational** and "storied" (K. Nelson);

## Word Learning in AAC: Use Attentional Cues

- Perceptual Saliency and Temporal Contiguity
  - In the earlier stages use highly referential and contextualized intervention
  - heavy emphasis on observable **objects, properties** and **events**
  - use **discourse-based** tasks; words cannot be taught in isolation

## Use Social/Pragmatic Cues

- Make clear your communicative intent (e.g., augmented input or gestural prompt) (Binger & Kent-Walsh; Preissler & Carey, 2005)
- Use highly preferred topics and activities to encourage **engagement**

## Learning Target

I can use pictures and words to tell about what happens in a book or in my class

## Use Linguistic Cues

- Provide users with a range of lexical types and grammatical markers in order to realize different types of clauses and phrases (Koul, 2003).

- When grammatical markers are provided, word order matches environmental language (Nakamura et al., 1998) even with nonreaders (Kaul, 2003)

- *Sleep Disneyland on night*

- {yes}

- Oh. That's a little unclear. But are you trying to say, you slept in Disneyland, not at home?

I slept in Disneyland at night

### Cognitive Cues

- Color grouping and shape (e.g. Krista Wilkinson)
- Visual Display Design (e.g. Janice Light)
- Motor planning and automaticity (e.g. Dukhovny & Gahl, 2014)

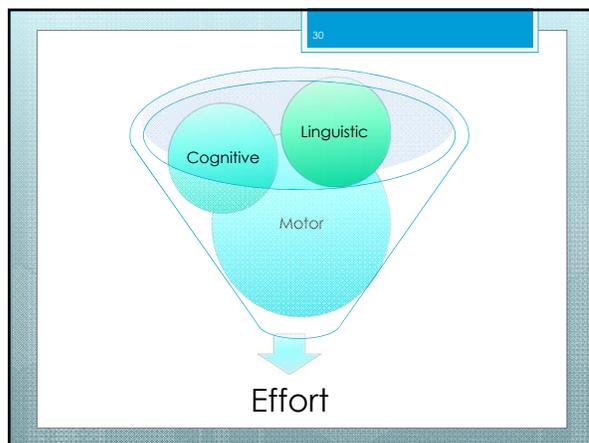
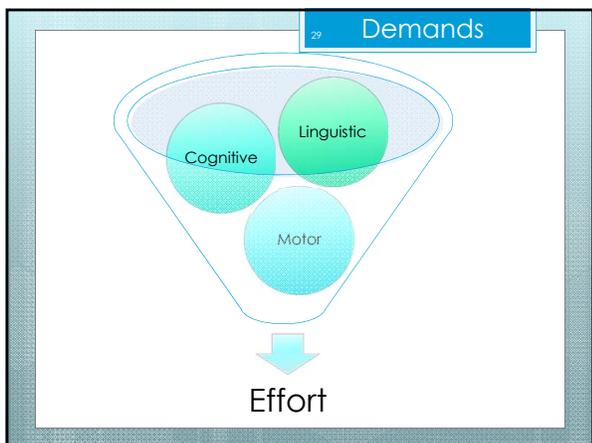
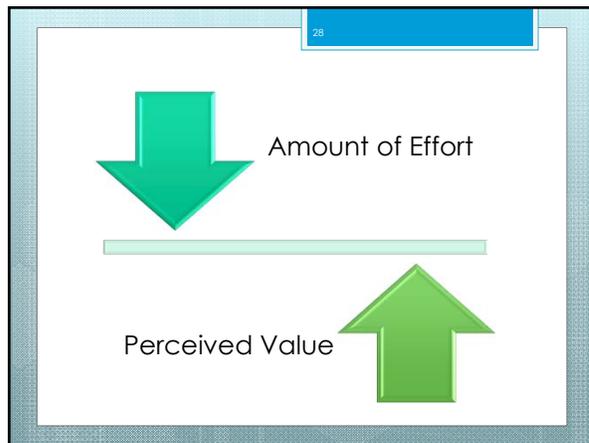
### Frameworks

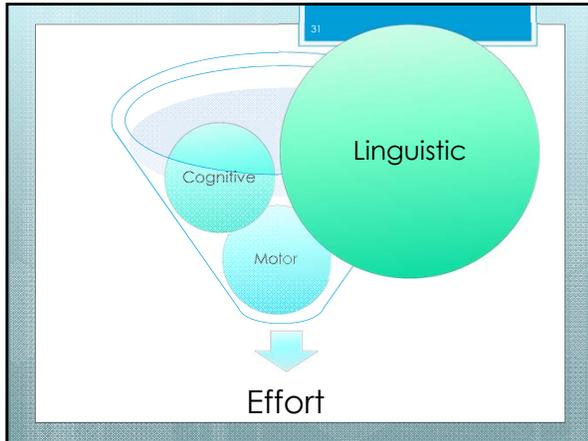
- Developmental: from single word to complex discourse
- Academic
  - 3 tiers (e.g. Bienmiller): basic, literate, discipline specific
- Core vs Fringe

### Implications for AAC Vocabulary Teaching

#### Essential Elements

- Planning
- Frequent models
- Frequent productions
- Contextually-relevant instruction that builds on skills & experiences
- In-depth instruction that changes depending on the stage of language development
- Based in discourse and interaction

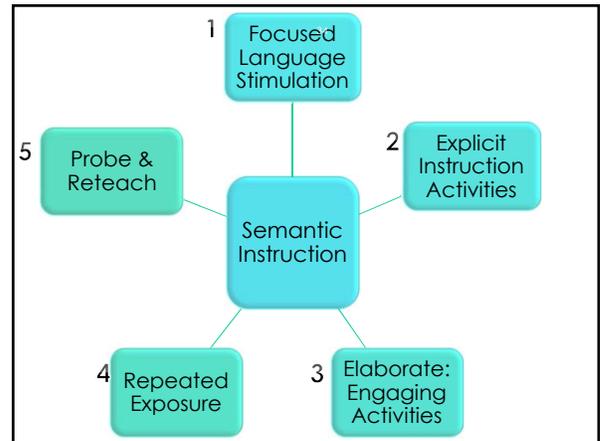




What is the *top priority* in the activity?

If vocabulary learning is the goal, then make the cognitive and motor aspects as easy as possible.

## Framework for Systematic Vocabulary Teaching



## Focused Language Stimulation

AAC Edition

What is Focused Language Stimulation?

- An intervention approach that:
  - Uses naturally-occurring opportunities
  - Includes modeling target words in ways that reveal their meanings
    - Brief definition
    - Clear connection to the context

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### Focused Language Stimulation

- Explain new word meanings when they are first used with student-friendly definitions
- Have student say it
  - With their SGD
    - Adjust pronunciation, if necessary
  - With their natural speech
  - To themselves (inner speech)

(Dickinson, Cote, & Smith, 1993)

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### Target Word: Like

Focus on modeling & eliciting (not definition)

- Arrival: "I really **LIKE** your sweater." "Who **LIKES** my new shoes?"
- Circle: "I **LIKE** how Jenna is sitting." "Who would **LIKE** to be the snack helper?"
- Story time: "The caterpillar **LIKES** to eat strawberries."
- Art: "What color would you **LIKE**?" "I **LIKE** your picture."
- Outside play: "What would you **LIKE** to play?"
- Cooking: "Would you **LIKE** to help?"
- Snack : "I **LIKE** that lunchbox"

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### Focused Language Stimulation

We might also:

- Segment it.
- Talk about the part of speech

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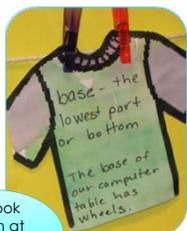
### Focused Language Stimulation

- Give multiple examples to link the known and unknown words.
- Dialogue-based (conversational) approach
  - Provides a context & the opportunity for support

(Dickinson, Cote, & Smith, 1993)

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### Word Bombardment



"...look down at the *base* of your desk"

"...at the *base* of the board"

"Put it at the *bottom* of the page."

VS.

"Put it at the base of the page. Where? The *bottom*. The base of the page."

"...draw a line from the top to the *base*"

### Opportunities for Production

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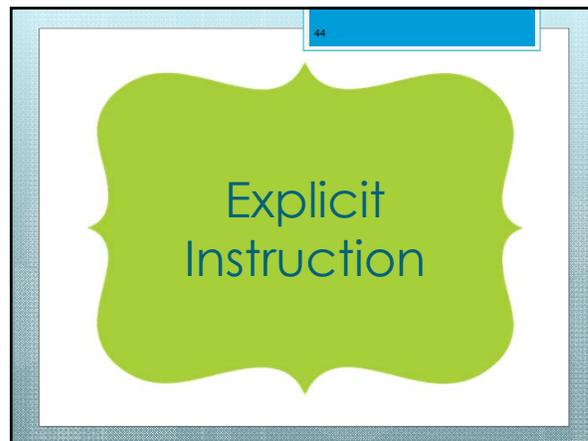
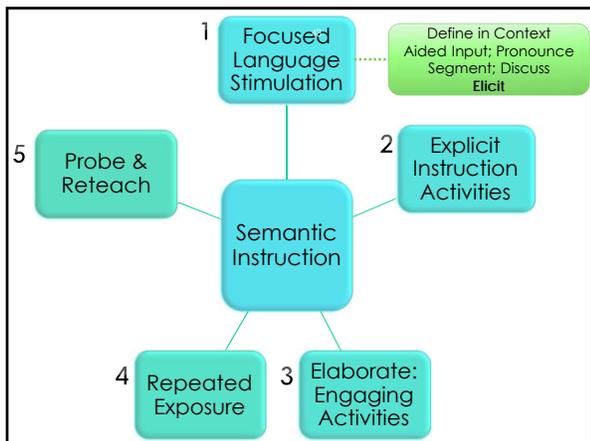
## Link to Meaning



Frequent receptive exposure



Frequent expressive production



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### What is Explicit Instruction?

#### Key Elements

- Teaching vocabulary in a way that is direct, meaningful, and effective
- Goal driven: Specific vocabulary targets
- High levels of planning
- Structured, systematic, scaffolded
- Creating opportunities (not just taking advantage of naturally occurring opportunities)

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### Direct Instructional Experiences:

- Designed to make the meaning clear
  - Working with definitions
  - Using contrastive examples
- Promote metalinguistic knowledge
  - Word consciousness
  - Self assessment
- Refining and clarifying the meaning

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### Student-friendly definitions

<p><b>ancient</b> very old</p> <p>These pyramids were built in ancient times.</p> <p>Synonyms: long ago old-fashioned out-of-date</p> 	<p><b>launch</b> to set something in motion</p> <p>The large rockets launched the space shuttle into orbit.</p> <p>Synonyms: start begin go forward</p> 
---	---

Photos from Ann Fausnight ([www.DevotedtoVocabularyDevelopment.com](http://www.DevotedtoVocabularyDevelopment.com))

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Rote memorization of a word and definition is the **least effective** instructional method resulting in **little** long-term effect.

(Kameenui, Dixon, & Carnine 1987)

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### Issues with a "Dictionary Definition" Approach

1. Definitions often use other words that the student doesn't understand.
2. Dictionary has multiple definitions & that can be confusing.
3. Lacks any sort of context.

Definitions are only a starting point.

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### intend

to plan to

Because the family **intends** to go on a picnic, they packed the cooler.

Synonyms:  
mean  
expect  
aim  
be determined to



Photos from Ann Fausnight  
www.DevotedtoVocabularyDevelopment.com

What's something you know about this word?

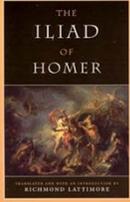
What does it make you think of?

What part of speech do you think it is?

What part of this word do you already know?

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### epic

Definition

- A very long, extended poem usually describing the tale of a hero
- Extremely awesome

Part of speech

- Noun ("The film is an epic.")
- Adjective ("It was an epic trip!")



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### The Power of Positive & Negative Examples



This is glerm. /

This is NOT glerm. —

Here's glerm. /

NOT glerm. |

Glerm, /

NOT glerm. —

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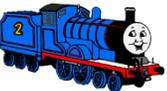
Initially, the examples must be clear & clean

Prototypical exemplars: The average representation of a concept



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### Use the Power of Contrast

1. "These can GO."
  - 
  - 
  - 
2. "These do NOT GO."
  - 
  - 
  - 

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## Word Consciousness

- Help the student become aware of target words
- Have them listen for them
- Build an environment where noticing target words is valued

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## Self Analysis

- Get them thinking: "What do I already know about this word?"
- Rating Scales

★ I've never heard this word before.

★ I've heard this word, but don't know what it means.

★ I know something about this word.

★ I know all about it and can teach it to a friend.

1 I don't know it & don't use it.

2 I sort of know it but I don't use it.

3 I know it & sometimes use it.

4 I know it well & use it often.

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<http://bit.ly/1g1LfEo>

Vocabulary Scale	
1	I've never heard it before.
2	I've heard it but I don't know what it means.
3	I might know a little about it.
4	I know something about it.
5	I know a lot about it.

Vocabulary Scale

1 I've never heard it before.

2 I've heard it but I don't know what it means.

3 I might know a little about it.

4 I know something about it.

5 I know a lot about it.

Vocabulary Rating Scales Download

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## Word Notebooks

My Words

Word	Definition	My Rating
annoyed	mildly upset	3
elaborate	expand	2
expose	show or uncover	2
distraught	extremely upset	1
transition	period of change, growth, or movement	3
narrative	story	1

59 Explicit Instruction

*Lots of production experiences*

60

## Refining & Clarifying

61

### Initially: Clear & Clean Examples

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Contrast	
Clean & Clear	Ambiguous
• a wise grandma	• a history teacher
• an experienced babysitter with good judgment	• an energetic singer with a lot of talent
• a 40-foot oak tree	• a 10-foot oak tree
• a teenager who accepts responsibility for mistakes	• a teenager who blames others for mistakes

A toddler (outer ring)  
 10' tree (outer ring)  
 40' tree (middle ring)  
 mature (inner ring)  
 A wise grandma (inner ring)

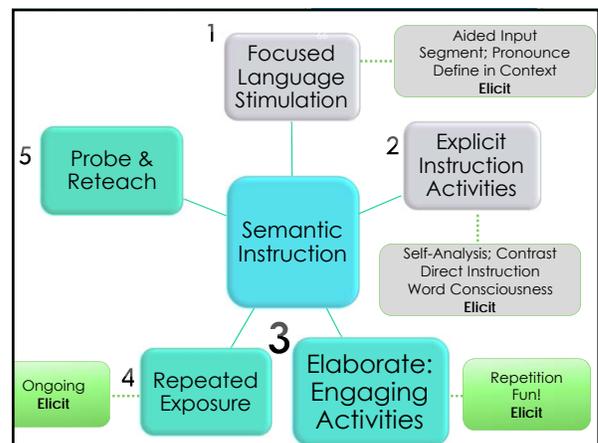
64

### Education Oasis (<http://bit.ly/1IHfDK2>)

**Word Map**  
 What is it? (left side)  
 What is it not? (right side)  
 What are some examples? (bottom)

**Word Chart**  
 Definition in own words (top left)  
 Examples (top right)  
 Word in Context (middle left)  
 Non-Examples (middle right)  
 Characteristics (bottom left)

- 65
- ### Other Things We Do to Make Words Clear
- Tell stories that feature the key words
  - Using activities to relate them to known words
    - Make associations
    - Similarities & differences
  - Connect with student's life experiences
    - "Where have you heard this word before?"



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# Engaging Activities

68 Surveys

Hi! Do you have time for a question?  
Our Word of the Week is annoyed.  
What makes you annoyed? Make a mark below your answer. You can mark as many things as you want. Thank you!

These things annoy me:

- Broken elevator |
- Having to rush ||
- Heavy traffic |
- Homework |||
- Loud places |
- People who ask for money |||
- Rude people |||
- Something else |

(recent)  
"What's the most recent song that you added to your playlist?"

It's Survey Time again!

Our Word of the Week is transition. Can you tell me about a time that you made a transition?

1. What happened?
2. When was it?
3. How did you feel about it?
4. What did you learn from the experience?

Thank you!

- 69
- ## Surveys for Vocabulary Building
- Choose the format
  - How will they conduct the survey?
  - Prepare the SGD and survey form
  - Pre-teach and practice
  - Enlist a few respondents
  - Conduct the survey
  - Debrief
  - Record results

- 70
- ## Language Experience Surveys
- "Where to you like to go?"
  - "How do you go home?"

- 71
- "Tell me about a time you were shocked."
  - "Did you ever do anything extravagant?"
  - "What do you own in abundance?"
  - "Tell me about something you did that took a lot of effort."
- Emotional Component
- 

- 72
- ## Vocabulary Sorts
- Activities designed to sort words into distinct categories
    - Example, Non-example; More, Less
  - Conversation-based
  - Can vary the type and level of difficulty
    - Single words
    - Word Pairs

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container

Yes      Possibly      No


Made with LessonPix

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### Word Pair Sort

WORD PAIR	SAME	OPPOSITES	GO TOGETHER	NO RELATIONSHIP
base-top		X		
base-foundation	X			
base-aside				X
base-down			X	

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### Word Pair Sort

WORD PAIR	ALMOST SAME	OPPOSITES	GO TOGETHER	NO RELATIONSHIP
go-stay		X		
go-went	X			
go-cup				X
go-car			X	

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### Word Sort

PROFESSOR DUMBLEDORE	GINNY	HAGRID
ancient	hopeful	tender
knowledgeable	youth	colossal
influential	immature	compassionate

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### "Go"

Labeling Activity

Things that go

Things that don't go



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### Collages

Things that take a lot of work.






### PicCollage

The screenshot shows the PicCollage app interface. On the left, there's a section titled 'PicCollage' with a definition: 'Speculate - to think about something and form a theory'. Below this is a question mark icon and a cartoon character. On the right, there's a collage of images including a book cover for 'The Iliad' by Homer, a note that says 'Epic: an extremely long poem; Super awesome', a note about 'Epic shopping trip', a note about 'Epic friend', and a note about 'Epic vacation'.

### Sentence Completion Activities

My friends **persuaded** me to \_\_\_\_\_ .

It would be fun to **decorate** a \_\_\_\_\_ .

It takes a lot of **effort** to \_\_\_\_\_ .

These open the door for discussion.

### Yes/No Questions

1. "Should you **assume** all dogs are friendly?" [Why?]
2. "Are students who stay up late **productive** in school?" [Why?]

### New Words

#### Matching Activities

1. folks - another word for people
2. diary - book that we write in every day, journal
3. sea - another word for ocean
4. kin - family, someone you care a lot about

### Qualitative Rating Scales

Hate it      Okay      Love it

"How would you feel if..."

1. "Your dad was persuaded to buy a TV?"
2. "Your friend berated you."
3. "Your mom obtained a new car."
4. "Your teacher produced a very hard test."

### Qualitative Rating Scales

A little      Some      A lot

"How much time does it take to:"

1. "go to Disney World?"
2. "tell a joke?"
3. "give someone a hug?"
4. "make a house?"

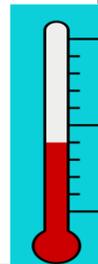
## Sentence Substitution

Provide word banks

- We were embarrassed to hear the doctor berate her patient.  
*reward, insult, remind, persuade*
- The boy was commended for returning the wallet he found.  
*belittled, praised, informed, supported*

## Set an Expectation for Lexical Diversity

- Introduce the concept
- Rate sentences with key words
  - 5=Fun & Interesting --- 1=Boring
- Make a list of over-used words
  - Brainstorm alternatives
- Keep visual reminders
  - Add to them as needed
  - E.g., Tired Words; Vivid Verbs



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**Said is Dead**

Argued	Lied
Dragged	Revealed
Complained	Shouted
Exclaimed	Squealed
Grinned	Told
Grouched	Whispered
Laughed	Yelled

**POW**erful Words

BE A WORD CATCHER

## Engaging Activities

### Providing:

- Emotional salience →
- Repetition with variety →
- Choice →

### Gives us:

- A memory advantage
- Something for every learner
- An autonomy boost

## Guessing Games

- Give a bank of vocabulary words.
- Present word associations.

Targets: rotund, romp, colossal

- "I'm thinking of a word that:"
  - "means *very large*"
  - "goes with *walking*"
  - "is related to *circle*"

## Guessing Games

Targets: go, make, like

- "I'm thinking of a word that:"
  - "means *love*"
  - "goes with *yummy things to eat*"
  - "is *something I feel for you*"

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## Guessing Games

- Display target words
- Give clues
- Students guess (& say) target word

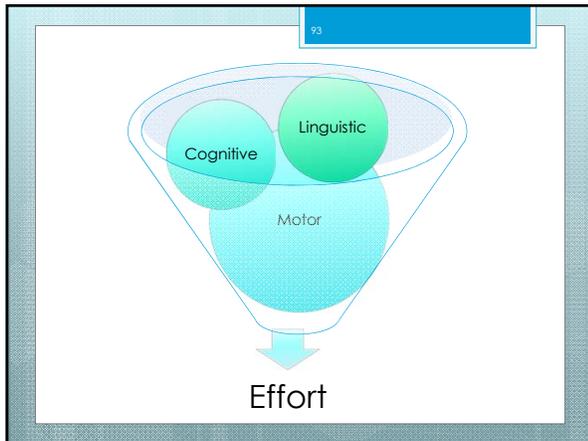


"I'm thinking of a describing word."  
 "It is the opposite of 'true'."  
 "Sometimes it can mean 'fake.'"

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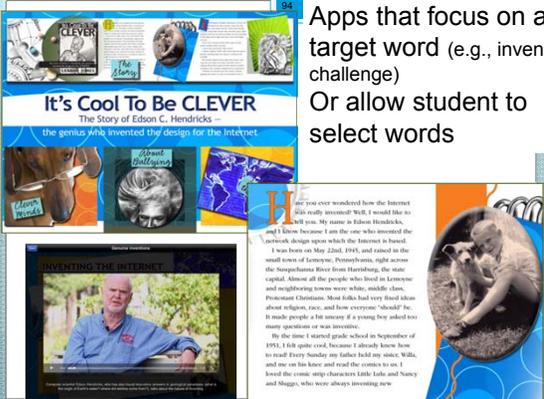
## Apps & Computer Activities

- Fun, engaging
- No endorsement is implied
- Many uses beyond their intended (stated) purpose
  - Allows us to get creative.
- Motor demands may preclude independent use



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## Apps that focus on a target word (e.g., invent, challenge) Or allow student to select words



**It's Cool To Be CLEVER**  
 The Story of Edison C. Hendricks  
 the genius who invented the design for the Internet

Have you ever wondered how the Internet did really succeed? Well, it would like to tell you. My name is Edison Hendricks, and I know because I am the one who invented the network design upon which the Internet is based.

I was born on May 22nd, 1945, and raised in the small town of Kennerly, Pennsylvania, right across the Susquehanna River from Harrisburg, the state capital. Almost all the people who lived in Kennerly and neighboring towns were white, middle class, Protestant Christians. Most folks had very fixed ideas about religion, race, and how everyone "should" be. It made people a bit uneasy if a young boy asked too many questions or was inquisitive.

In the time I started grade school in September of 1952, I felt quite cool, because I already knew how to read! Every Sunday my father held me on his knee, and me on his knee and read the comics to us. I loved the comic strip characters Little Lulu and Nancy and Shaggy, who were always inventing new

95

## Use Avatars





- Introduce an activity
- Create a cartoon or story around a target word
- Share with others

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Student A  
 -annoyed  
 -outraged  
 distressed

Student B  
 -mad  
 -angry

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## Digital Storytelling Apps

- E.g., Tellagami
- Create an animated story around a target word




Tellagami examples at <http://bit.ly/1cZ8f5L>

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## indifferent



99

## Shadow Puppet App



100

## SLP Therapy Apps

### Conversation TherAPPy



Tell or write a story about being lonely.

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## Vocabulary-Specific Apps

Middle School Vocabulary  
By Monkey in the Middle



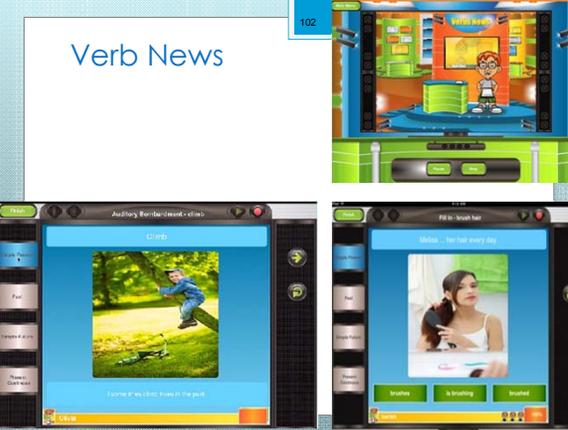
Which quiz would you like to practice?

- 01. Nouns - Things ?
- 02. Adjectives - Amount ?
- 03. Verbs - with Things ?
- 04. Nouns - Ideas ?
- 05. Adjectives - of Ideas ?
- 06. Verbs - with Ideas ?
- 07. Nouns - Personal ?
- 08. Adjectives - of Things ?
- 09. Verbs - with People ?

Reset Send

102

## Verb News



103

### Multiple Meaning Library

104

### Vocabulary Central

by Pearson, Prentice Hall

105

### PicLits (www.piclits.com)

106

### PicLits (www.piclits.com)

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Word Sort	Word Collage	iPad Activity
Computer Activity	Word Stories	Talk About It
Read About It		

Made with LessonPix.

- Repetition with variety
- Choice

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## Repeated Exposure

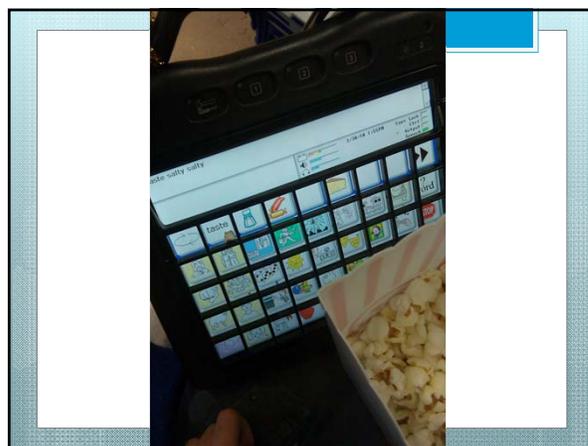
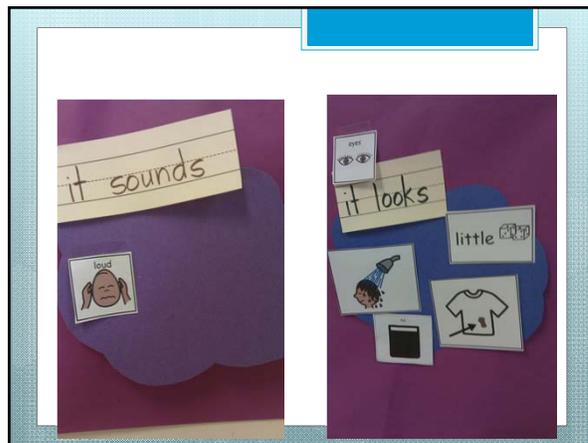
"Knowledge unused tends to drop out of mind. Knowledge used does not need to be remembered; Practice forms habits and habits make memory unnecessary. The rule is nothing; the application is everything."  
 — H. Hazlitt

### Provide multiple opportunities for word retrieval

- Word learning is strongly associated with word retrieval
- Model and elicit the use of the target word across multiple contexts
- Make the target word salient as you encounter it in a different context from the one you used to teach it
- Repetition, repetition, repetition

### Thematic Unit Targets

- Language/Vocabulary targets
  - Looks + full, little, wet, dirty
  - Smells + stinky
  - Sounds + loud
  - Feels + sticky, wet,
  - Tastes + salty, sweet, yuck
- Not + above
- Eyes, nose, mouth, tongue, ears, hands, fingers,
- My +
- Name +
- Sight words
  - See
  - Look
  - Little





protection

keeping

someone

from

hurt

S I

## Reteaching

- I do it
- We do it
- You do it
  - [Teach Like a Champion](#), Doug Lemov

### It's *Not* About Word Lists, Quizzes, or Test Scores

Robust vocabulary learning takes them closer to literate language & academic success.

Not just learning brand new words (like *abject* & *propensity*) but also...

- Learning more about words that are somewhat familiar (*abundant, sage, divest, consider*)
- Using more words in their conversation and writing (e.g., *Laugh: Chuckle, giggle, guffaw*)

CHILDREN NEED PARTICIPATION IN MEANINGFUL EXPERIENCES AND ACCESS TO LANGUAGE TO LEARN THE MEANING OF WORDS.

- “Word learning is the product of the active mind of a child. Children strive to learn the words that can express what they have in mind...A language will never be acquired without engagement in a world of persons, objects and events.” L. Bloom 2000 p. 44

Handouts will be available next week on [www.praacticalaac.org](http://www.praacticalaac.org)

# Thank You!

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