

## Let's think about vocabulary learning

1

**Carmen: 7 years old**

\* Carmen: What is *majority*?  
Mom: The most of..as in the majority of the class..most people in the class?

Mom: Be careful you can get *an electric shock*  
Carmen: Do you mean I can get *electrocuted*?

Mom: That is probably *illegal*? Do you know what *illegal* means?  
Carmen: That you can get *arrested*??

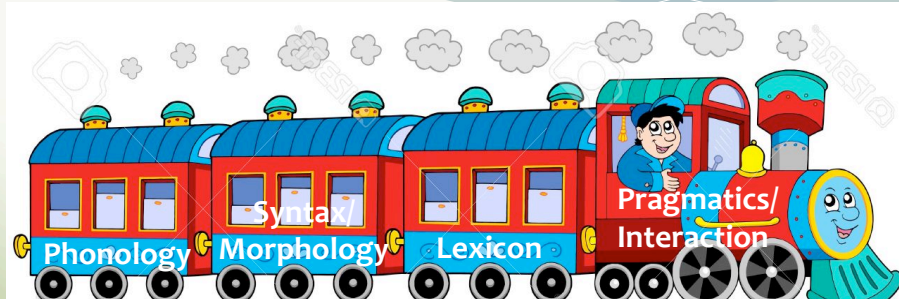
2

## Language develops in interaction



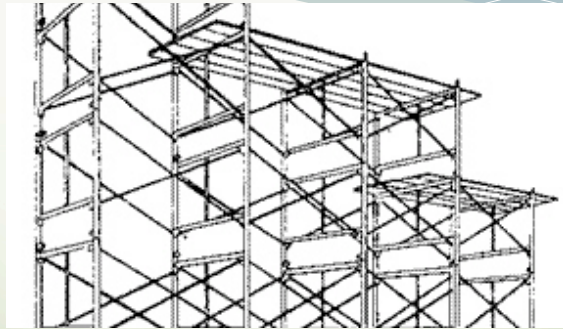
## The train of language development

(Noon, 2014)



Making 'sense' = Experience

## Facilitative Adult Behaviors



## Vertical Structure (Scollon, 1976)

- \* Adult: **where** did you go with Nona? **Questions**
- \* Child: Park
- \* Adult: Oh you went to the park? **Expansions (Recast)**
- \* Child: Yes, went park
- \* Adult: **What** did you do at the park?
- \* Child: play
- \* Adult: You playED with Nona? **Correction (Recast)**
- \* Child: yes
- \* Adult: What did you play?
- \* Child: Hide and Seek

- \* Discourse sequences such as these are common in typical early development, in which the adult recasts and expands the child's utterances providing models of how to express more explicitly in a combinatorial way.
- \* Prior to the acquisition of fully generative linguistic systems, children produce language that includes both generative and repeated structures from the adult's prior utterance.



A similar pattern is not typically observed in children who use AAC (even for those without cognitive impairment).

## Typical Aided Conversation

## Typical Aided Conversation Vertical Structure

- \* So you showed me you have a tattoo on your arm      \* {yes}
- \* Do you want to tell me about that?      \* *birthday*
- \* "birthday!" what about your birthday?      \* {signs home}
- \* "home?" You had a birthday [...] Did you have a party? When was that?      \* *April*

## Production

*“music”, “guitar”, “friends”, “eight”, “pretty”,  
“flower”, “white”, “one”, “blue”, “picture”, “doll”,  
“my little pony”, “book”, “cupcake”*

Context and Partner Dependency

Restricted range of communicative functions

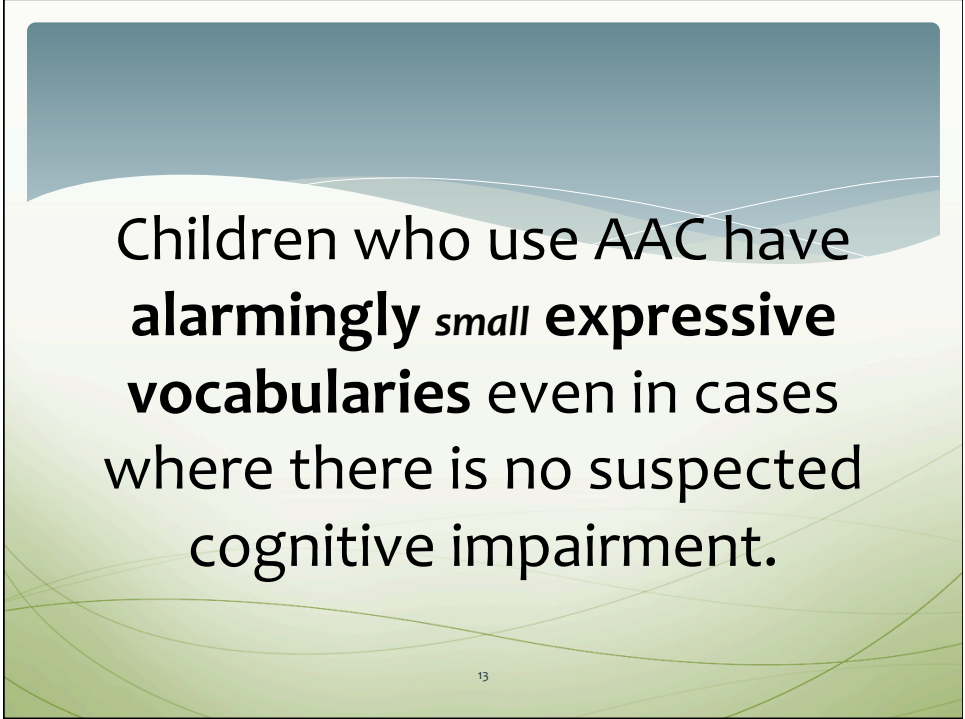
Use of compensatory strategies

Small Expressive Lexicon: Mostly nouns

Word order differences

Absence of Grammatical Morphemes

One-word utterances



Children who use AAC have **alarmingly *small* expressive vocabularies** even in cases where there is no suspected cognitive impairment.

13

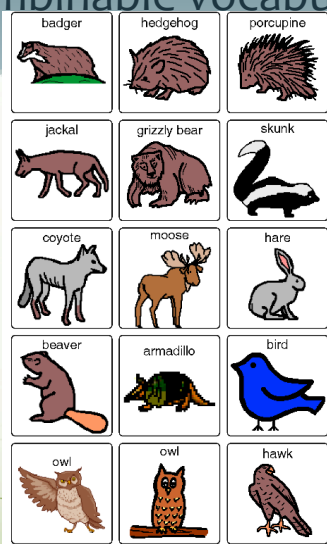


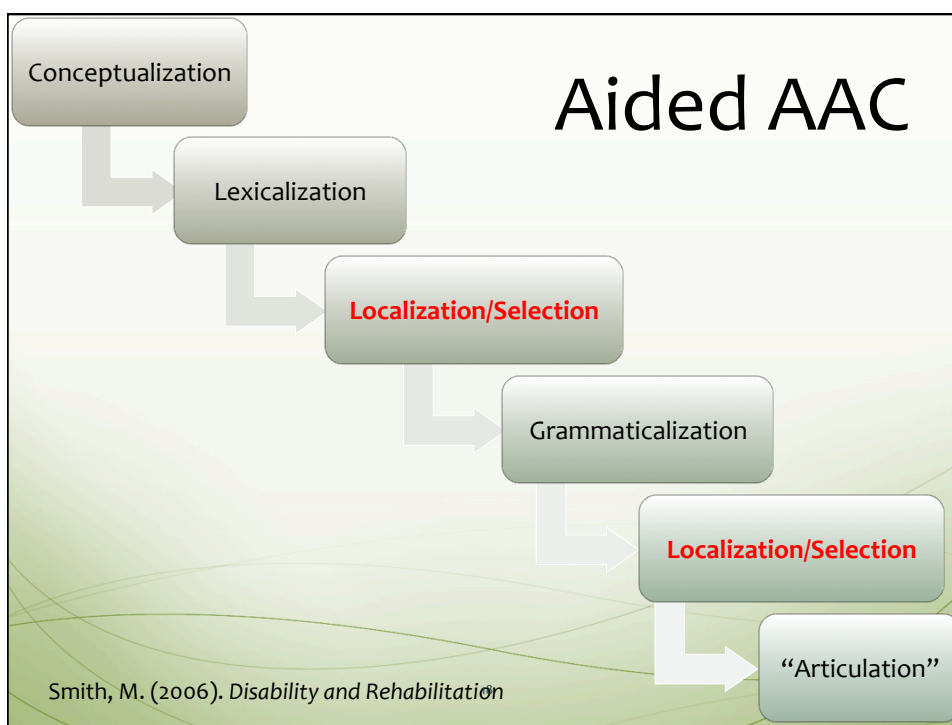
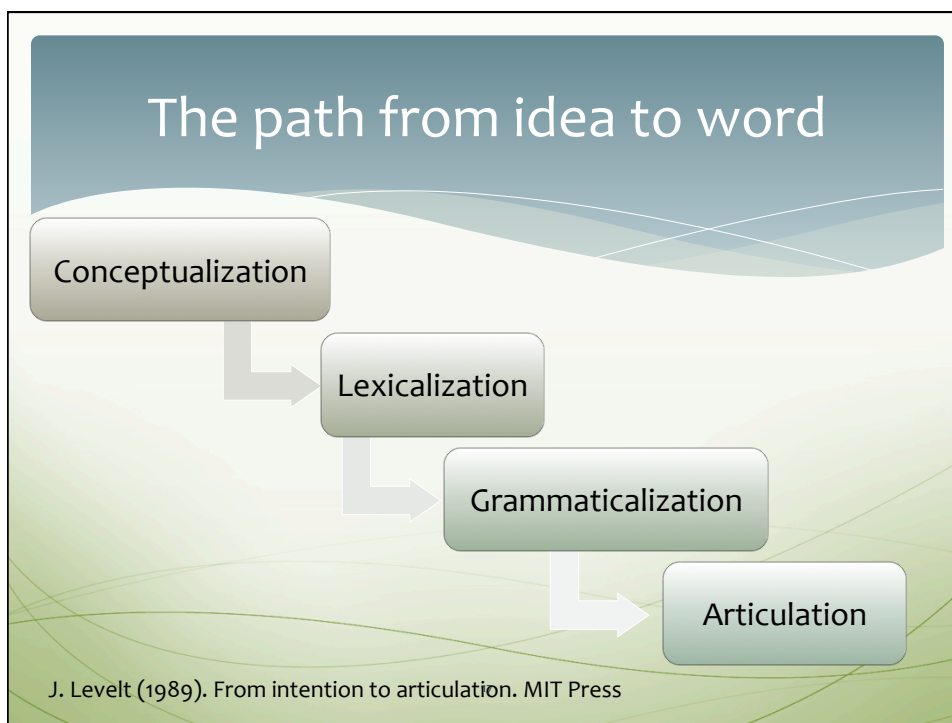
Possible Reasons

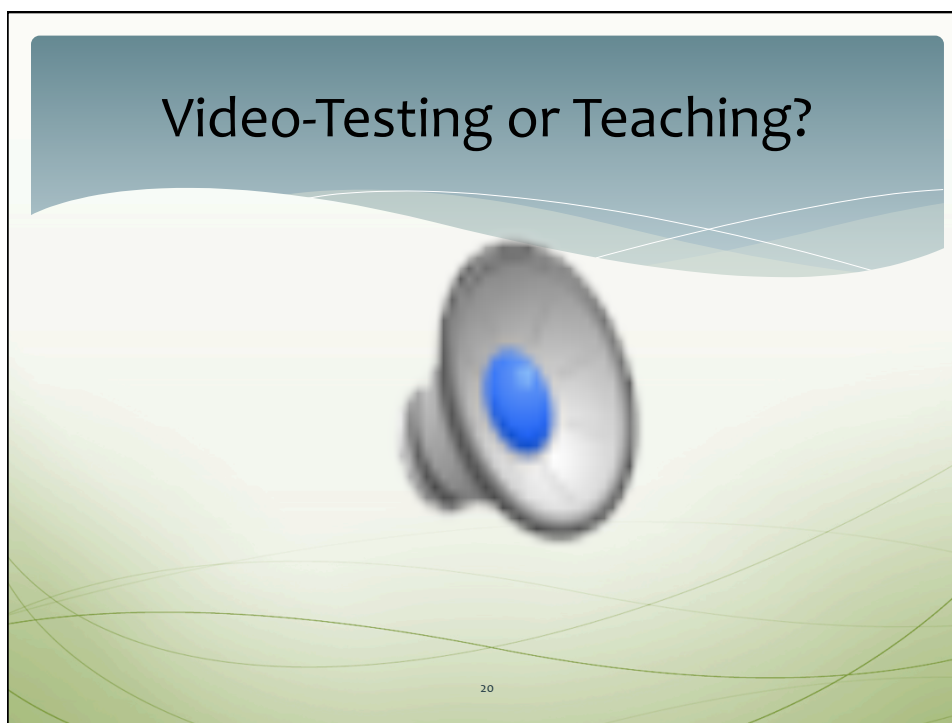
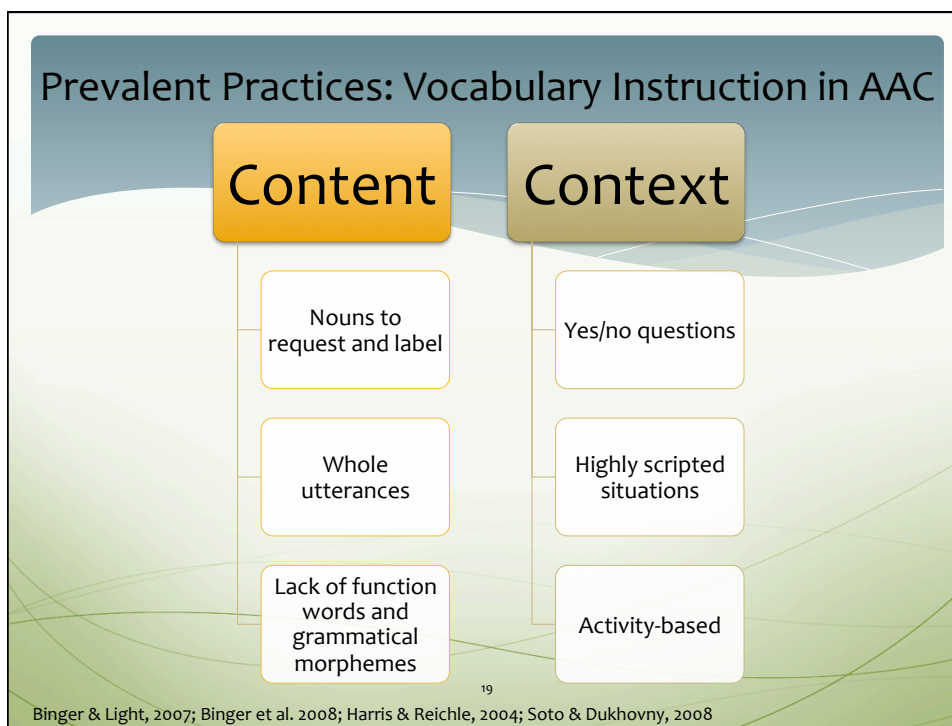
## Acquisition Contexts

- \* Restricted access to conditions that have proven facilitative:
  - \* locomotion and exploration
  - \* participation
  - \* spoken input
  - \* proficient aided language users
- \* Delayed onset of AAC
- \* Atypical role of comm. partner

## Many AAC displays do not include combinable vocabulary







## We rely heavily on “testing” tasks

### \* Testing

- \* Captures vocabulary the student already knows
- \* Minimal scaffolding
- \* Not teaching anything new

### \* Teaching

- \* Targets vocabulary the student doesn't use or understand
- \* Makes heavy use of verbal scaffolding
- \* Builds on creating opportunities for the use of the target word

21

## Are we testing or teaching?

### \* Testing

- \* More. Show me 'more.'
- \* Stop. Which one says 'stop'?
- \* Is that 'happy' ?  
( yes or no?)
- \* Go. Point to go.
- \* Tell me on your talker.

### \* Teaching

- \* More. Here's more.
- \* Stop. Want me to stop?
- \* Happy. You look so happy!
- \* Go. Let's say 'go'!

22

## Drill & Task-oriented: **Poor Generalization**

(Stiegler & Hoffman, 2001)

23

## What is “learning” a word?

- \* It is tricky.
  - \* Understanding it
  - \* Using it

Typical Development: Through the **use** and **production** of utterances that words/forms not previously comprehended are eventually “understood.”

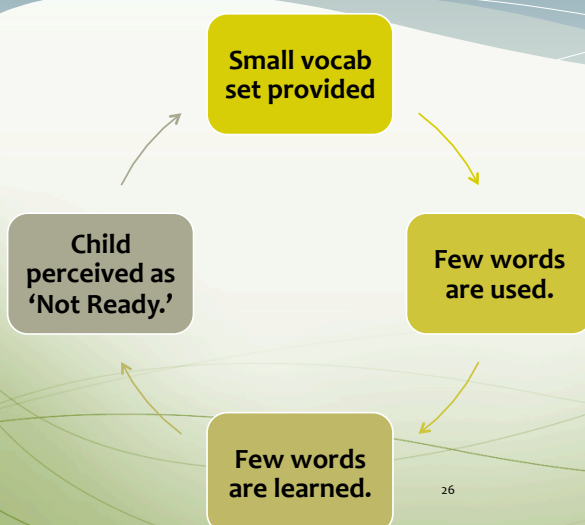
(see Kirchner, 1991; Bodies of work by C. Prutting, C. Snow & E. Clark)

Saying and using new words (& their various forms) builds our comprehension of them.

“But what if you *can't* say them?”

25

## Typical AAC Situation



- \* Access to words is based on a readiness model.
- \* Words are provided based on our perception of language learning ability.

26

So how ***should*** we teach  
vocabulary to children  
who are learning to use  
AAC ?

27

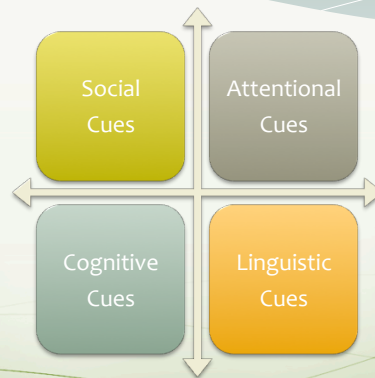
## Apply Typical Development Principles

- \* Neural recruitment: We don't learn things randomly, we learn things relative to what we already have (Lakoff, 2015)
- \* No evidence that kids with disabilities follow different developmental paths or learn language according to different operating principles

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

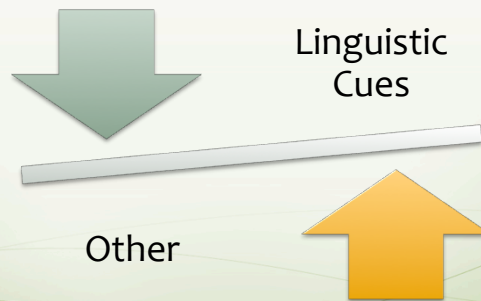
28

## How children learn new words?



- \*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 weigh 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

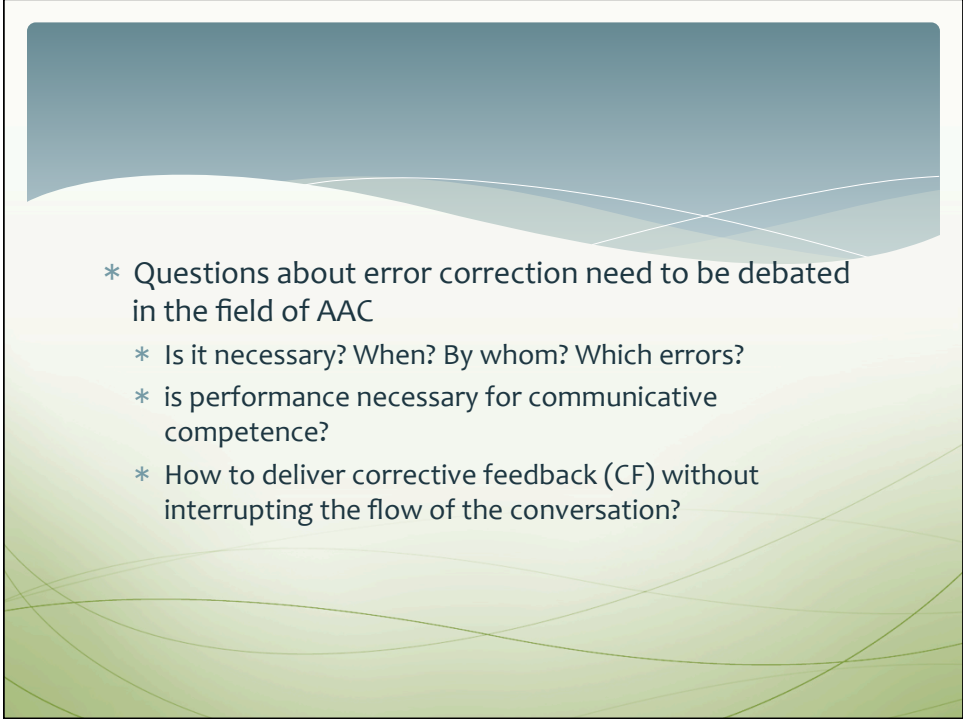
## Combating assumptions

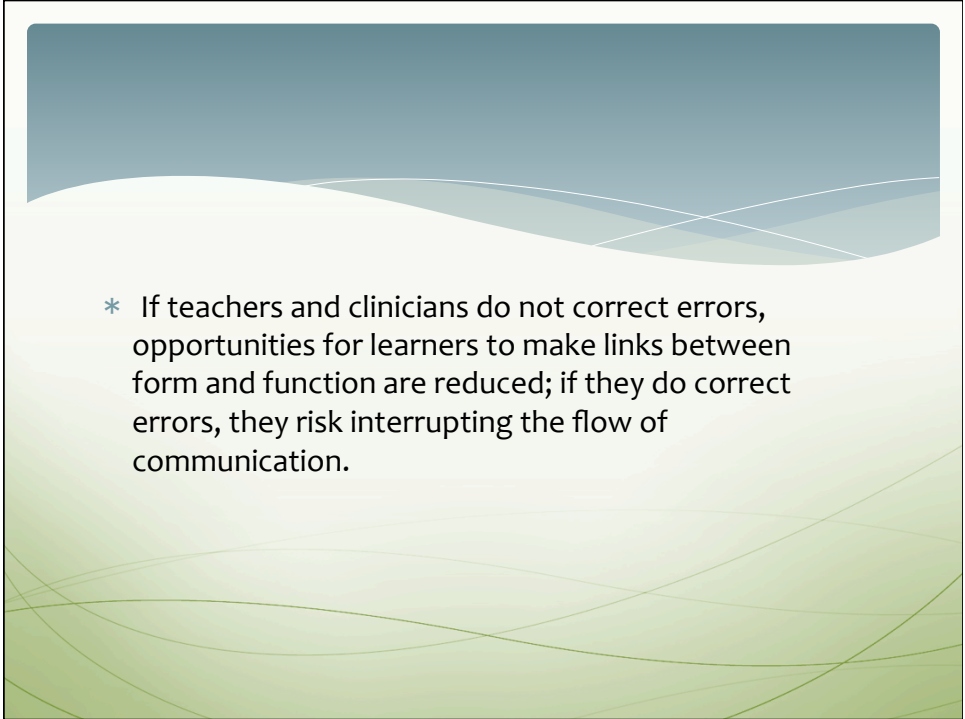
*“Modeling (aided language stimulation) all day, every day is desired in AAC, **with no requirement of a response.**” (ATIA 2016)*

## Practice, practice, practice

Like any other form of knowledge, linguistic structures are better acquired through use (Tomasello, 2003).

In controlled studies, input and production are more facilitative for vocabulary acquisition by young users of AAC than input alone (e.g., Ronski et al., 2010). The children made higher vocabulary gains when they were expected and prompted to use their AAC systems than when they received augmented input alone.

- 
- \* Questions about error correction need to be debated in the field of AAC
    - \* Is it necessary? When? By whom? Which errors?
    - \* is performance necessary for communicative competence?
    - \* How to deliver corrective feedback (CF) without interrupting the flow of the conversation?

- 
- \* If teachers and clinicians do not correct errors, opportunities for learners to make links between form and function are reduced; if they do correct errors, they risk interrupting the flow of communication.

- \* If users of AAC do not practice performance, cannot develop motor plan to automatize their language.

LANGUAGE is NOT possible  
without INTERACTION



## We can improve vocabulary learning in students who use AAC by:

- \* Providing them with access to a larger vocabulary set
- \* Making the learning targets explicit
- \* Using an instructional sequence that is discourse-based and provides high levels of exposure to the target words
- \* Eliciting recently-learned words frequently
- \* Having the learner grammaticalize new words
- \* Engaging the learner in authentic, relevant instructional activities
- \* Using contrast effectively
- \* Practicing newly learned words in varied contexts

Provide Access to a  
Larger Word Set

Readiness  
Model

40

"In 12 months, I want him to be able to use this board."

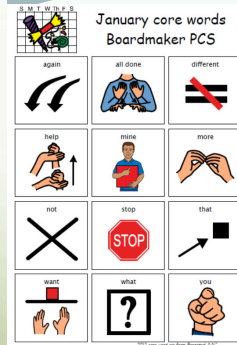
Grow the System in a Thoughtful Way

Pixon Project Kit

"I'll start w/ a smaller set & add words each month."

42

# “A Year of Core” Strategy



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

Monthly Planning for AAC Use: For parents and Staff each month		
Word Wall Words: High frequency and core language words introduced weekly one of which is a word family chunk.	5 per Week	1. My 2. I 3. Go 4. Jump 5. Again
Communication Phrases: Phrases to be focused on and modeled at every opportunity throughout the week.	2-3 per Week	
	Attention  Protest • No want  Request • I want that • I go now	Comment  Questions  Directing
Expanded core: Feelings:	1 per Month	
1. Concrete Feeling (Sad)		Picture of Sad
2. Understanding: He is sad because he fell.	Each family and Staff member will get monthly packet of words and symbols used with students to reinforce.	Things that make us sad: 1. Getting hurt 2. Getting something taken away. 3. Being told no 4. Not getting a turn 5. Having to wait 6. Missing an activity
3. Commenting: He sad		• Sad Not get • I sad • Sad not my/ no turn • Sad no go • Sad no friend

<http://bit.ly/15Mspt7>



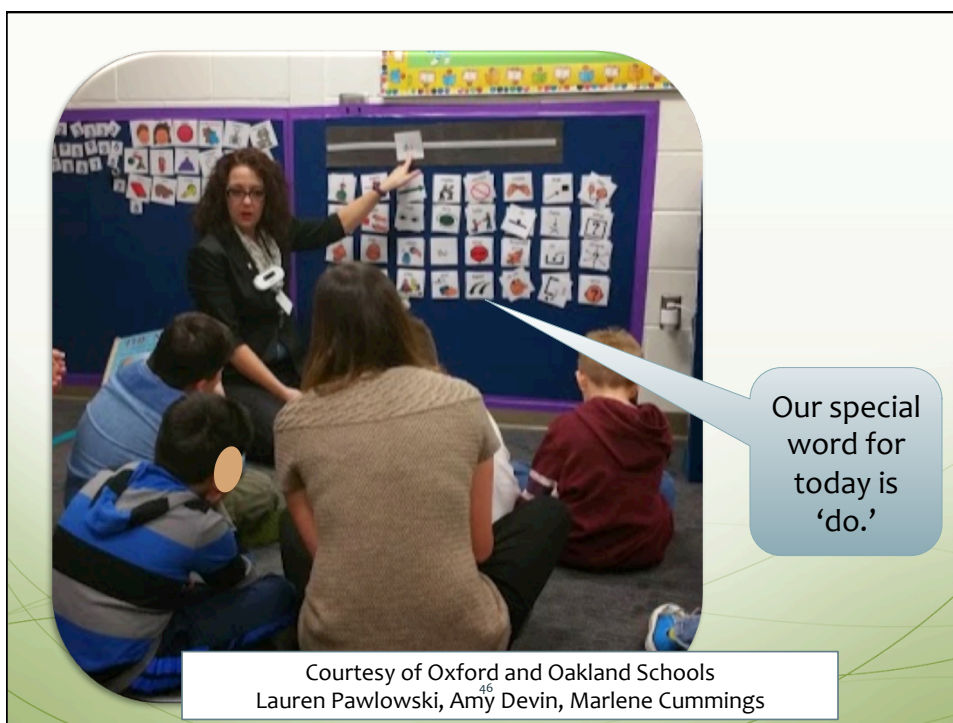
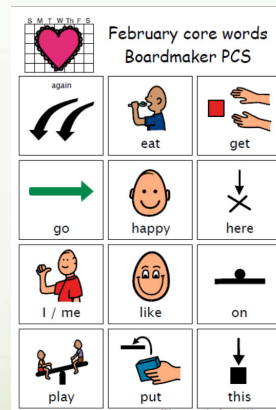
Oakland Schools (courtesy of Marlene Cummings)

## Make vocabulary targets explicit

- \* Display them visually
- \* Help learners know what the goals are



Oakland Schools (courtesy of Marlene Cummings)



Courtesy of Oxford and Oakland Schools  
Lauren Pawlowski, Amy Devin, Marlene Cummings

## Explicit & Visual



Vocabulary  
Word  
Wall

Assume  
False  
Productive



Invite  
Celebrate

47

## Provide Discourse-based Intervention

### The adult:

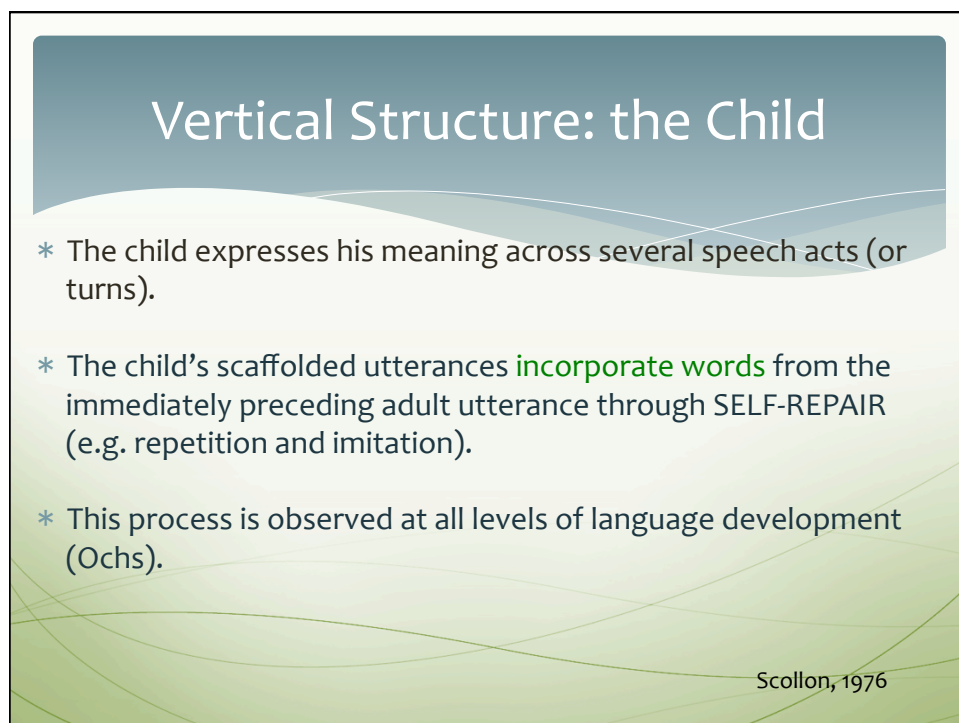
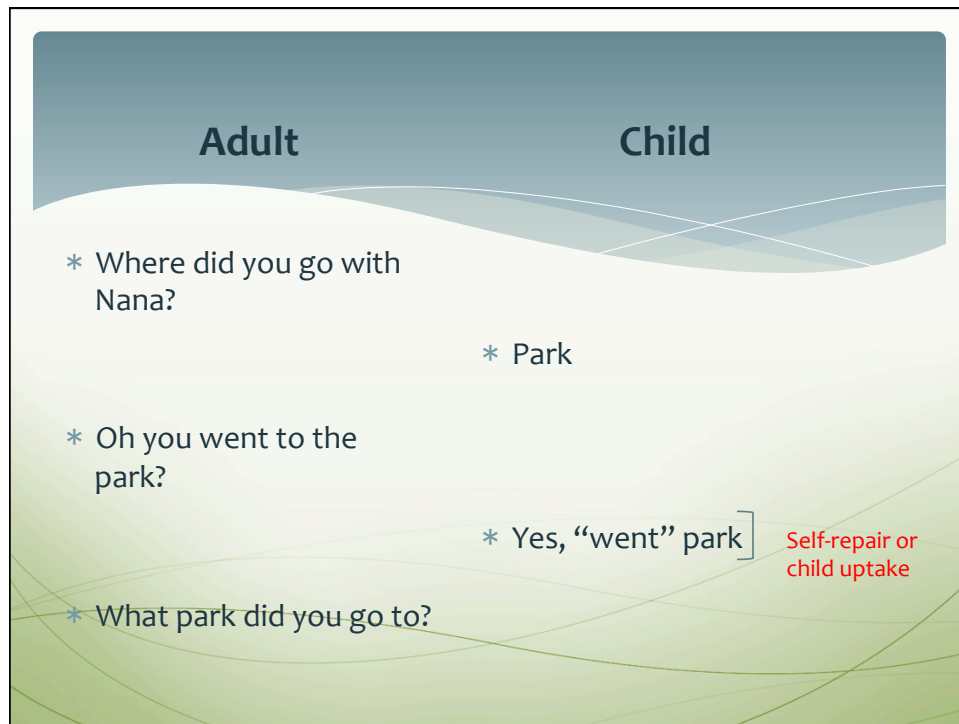
- \* Interprets & shapes the learner's emergent language forms in interactive activities
  - \* E.g., in conversation, during shared book reading
- \* Prompts & provides models that serve to expand
- \* Builds on the learner's communicative intent
- \* Uses verbal scaffolding to support the interaction

(e.g., Bruner; Kirchner; Prutting; Snow)

- \* Explicit vocabulary teaching does not on its own provide adequate learning; vocabulary is learned in authentic interaction but **adults must use corrective feedback to make the vocabulary more salient for language learners** (Allen et al., 1990; Harley, 1993, 1994; Swain, 1985, 1988).

## Verbal Scaffolding

- \* It is a dyadic process whereby the adult and the child jointly construct a dialogue within a shared context;
- \* The adult interprets and shapes the child's emergent language forms;
- \* The adult uses wh questions, recasts, models, expansions, prompts, contingent queries, and verbal to expand and build on the child's communicative intent and to stimulate further dialogue;
- \* The responses of each partner depend on the prior utterance or actions of the other



## Recast

An utterance that modifies (e.g., expands, deletes, corrects) the child's utterance while maintaining its central meaning (Bohannon, Padgett, Nelson & Mark 1996).

*C: boy is reading book*

*A: boy is reading A book (?)*

- \* Extensive research on the facilitative effect of recasting on language acquisition for typical as well as atypical populations (e.g., SLI, MR, ASD) (e.g. Arkenberg, 2006; Baker & Nelson, 1984; Nelson, Camarata, Welsh, Butkovsky, & Camarata, 1996; Camarata, Nelson, & Camarata, 1994; Nelson et al., 1996; Nelson, Craven, Xuan, Arkenberg, & Lauck, 2002; Nelson, 2000)

## Metalinguistic Feedback

- \* Comments, information, or questions related to the well-formedness of the utterance (Lyster & Ranta, 1997):
  - \* Metalinguistic comments
  - \* Metalinguistic information
  - \* Metalinguistic questions

A: Because it happened in the past, you can say “I WAS seven”

## Clarification Requests

- \* Feedback that carries questions indicating that the utterance has been ill-formed, incomplete or misunderstood and that reformulation is required:
  - \* Specific: They have what?
  - \* Generic: What? What are you trying to say?

## Repetition

- \* This feedback is simply the adult's repetition of the child's utterance, usually with a change in intonation to emphasize the error

C: I screamed my mom come bathroom

A: "I screamed my mom come bathroom?". Does that sound right?

## Elicitation

- \* It prompts the learner to self-correct:
  - \* Request for reformulation
  - \* Open ended questions
  - \* Strategic pauses

- \* Meta-analyses indicate that explicit feedback is more effective than implicit forms of corrective feedback (Russell & Spada, 2006; Miller & Pan, 2012)
- \* Learners benefit from CF types that push them to modify their output (e.g. repetitions, metalinguistic clues, clarification requests and elicitation) more than they do from CF that provides them with the correct model alone (i.e., recasts) (Ammar, 2008; Ammar & Spada, 2006)

## Example of an Intervention that Uses CF in Conversation

## Conversation-Based Intervention: E.g. Personal Photo Description

- \* Elicit vocabulary using Open Ended Questions and Contingent Comments

Adult: "Tell me what is happening here"

"Tell me about this day."

"Tell me what happened that day."

Soto, 2013

## Elicitation + Recast

- \* Child: *Birthday.*
- \* Adult: Whose birthday? **Elicitation**
- \* Child: *I*
- \* Adult: Oh! This is your birthday. **Recast**

Soto, 2013

## **Provide direct instruction + metalinguistic feedback + recast + prompt for reformulation**

- \* Adult: So to make that a little bit more clear, we need a few little words, right. Because it happened in the past you can say: "This WAS my birthday." Can you tell me "This WAS my birthday." ?

Soto, 2013

## **Model on the device or provide gestural prompt**

## Continue the conversation using the same procedures at each turn

- \* Adult: Do you remember how old were you?
- \* Child: *Nine years old.*
- \* Adult: You were nine years old. Let's make that a full sentence. I WAS
- \* Child: *I was nine years old.*
- \* Adult: What else do you remember about that day? Tell me about it.
- \* Child: Dad mom
- \* Adult: So remember, we're using our complete whole sentences, right? So you would say: "This is mom and dad."

Soto, 2013

- \* We have used the same procedures with other props:  
e.g., videogame catalogs, wordless books, youtube videos, games, journal writing, etc.
- \* conversations about personal experience
- \* personal and fictional narratives

## Probe 1

“cat” “going” “fishing”  
 “get” “a fish”  
 “fire”  
 “make” “fish”  
 “cat” “dinner”

## Results Probe 3

“he” “is” “sleeping” “and” “daydream” (no) “nightmare” (no)  
 “what I want to say is not on my device”, “What I want to say is similar to” “daydream”  
 “about” “a” “girl”  
 “What I want to say is not on my device”  
 “get up”

## Results Probe 6

\* When asked to imagine a trip to the zoo:

“Think” ... “I” “went” “to” “the” “zoo”  
“minute”

“A” “Lion” “what I want to say starts with r (run)”  
“away”

“I” “go” “home”

“I” “think” “about” “the” “lion”

“I” “go” “to” “the” “forest” “for” “a”  
“walk”

“Tree” “I” “sit” “near” “it”

“I” “hear” “a” “lion”

“I” “look” “on” “rock”

“I” “see” “the” “lion” “sleep”

“I” “think” ..

## Individualized, Monitored Intervention sessions

\* Know your client and his language level

\* Know his/her AAC system

\* Set appropriate language targets

- \* Grammatical skills of AAC users improve when the user is prompted to imitate the recast.
- \* Grammatical skills of AAC users improve when there is a *greater focus on discourse skills* in discussions, narration, & negotiation.

Brekke & von Tetzchner, 2003; Grove & Tucker, 2003; Waller & O'Mara, 2003; Soto & Wine-Seligman, 2003; Soto et al. 2007, 2008, 2009; Soto, 2014

## Elicit Frequent Productions of Newly-learned Words

High Concentrations of Productions & Exposures

## Expect, Encourage, & Support Grammaticalization

“FCAT was very hard. It was very effort.”

“It took a lot of effort. It was FULL of effort. ”  
[PAUSE]  
“What change can you make to ‘effort’ to say that?”

“I don’t know.”

“Let’s look at our word endings for some ideas...”

“Effortful. FCAT was very effortful.”

73

## In AAC

- \* For the sake of expediency, children who use AAC are **seldom encouraged to grammaticalize** their utterances

**PROBLEM: No use of function words = no practice = little progress**

- \* Expansions and recasts are **necessary but are not enough** for learning and generalizing to novel contexts (Soto, 2014)
- \* There must be the expectation for **reformulation of target structure** in discourse-based sessions

74

## Authentic and Functional

- \* Personally relevant
  - \* It looks different in little ones than in older ones
- \* Making connections to what the child already knows

75

## Contrast

- \* Salient Exemplars
- \* Polar opposites

Big, not big

Vs

Big, little

76

## Contextual Diversity

- \* Use the target vocabulary across:
  - \* Activities and contexts
  - \* Sentence structures
- \* Example
  - \* Introduce core early in day
  - \* Show, say, & discuss in circle
  - \* Highlight in activities, reading, snack, outside play, writing
  - \* Share w/ families for possible home practice



77

## Example: Language Experience Survey

After initial teaching,  
Student gets experience  
using his core words with  
different people around the  
school.

- \* “Where to you like to go?”
- \* “How do you go home?”



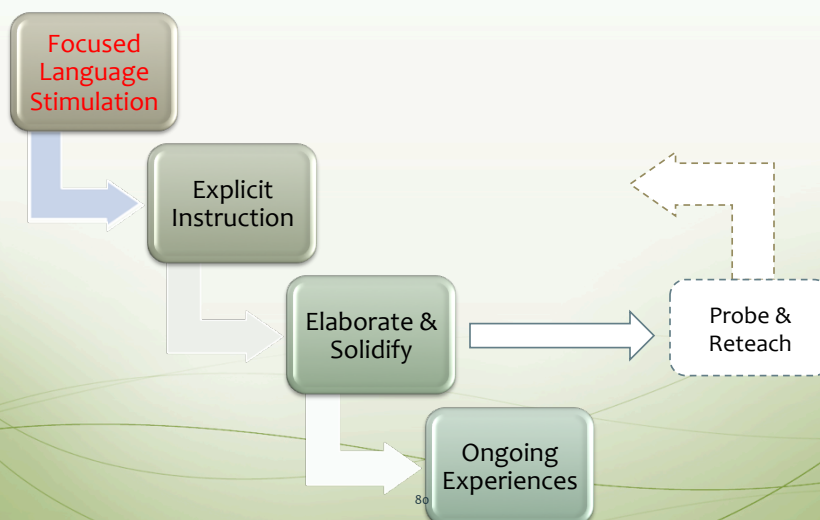
78

## Robust AAC Vocabulary Instruction

- \* Access to a larger vocabulary set
- \* Explicit learning targets
- \* Discourse-based w/ high levels of exposure to the target words
- \* Frequent productions of target words
- \* Grammaticalize the new words
- \* Engagement via authentic, relevant instructional activities
- \* Effective use of contrast
- \* Practice across contexts

79

## Framework for Semantic Instruction in AAC



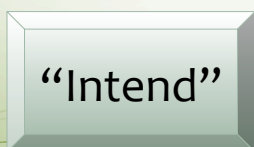
## What is Focused Language Stimulation?

- \* 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
- \* Is an **INDIRECT** teaching method

81

## Focused Language Stimulation

- \* Explain new word meanings when they are first used with **student-friendly definitions**
- \* In context and in discourse
  - \* Can include models of other forms of the word




intends, intended,  
intending, intent,  
intention, etc.

(Dickinson, Cote, & Smith, 1993)

82

## Student-friendly Definitions

<b>ancient</b> very old	
These pyramids were built in <u>ancient</u> times.	
Synonyms: long ago old-fashioned out-of-date	

- Use **only words the student already knows**
- Focus on the **essential elements**
- **Primary meaning**

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

83

## What problems does this present for teaching core words?



Try defining these words  
***without using other words our  
 student won't understand.***

it, can, do, have

85

## AAC Focused Language Stimulation

1. Use word in context
2. Provide a student-friendly definition
3. Repeat throughout the day/session
4. Student produces word

Essential

- .....
5. Segment it
  6. Elicit it some more
  7. Discuss it
  8. Talk about the part of speech

Preferred

86

## Student Produces the Word

- \*With their SGD
  - \* Adjust pronunciation, if necessary
- \*With their natural speech or vocalization
- \*To themselves (inner speech)

87



I you he she it we  
boy girl can come do  
get go have help  
know like look read  
say see sing talk  
think that want in  
on big more not now  
good all done what

## Core Words

88

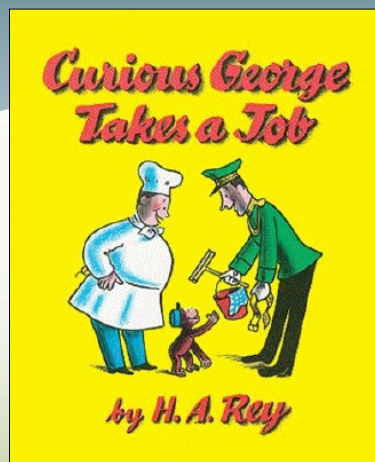
4/16/16

## 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"

89



### Reading Aloud

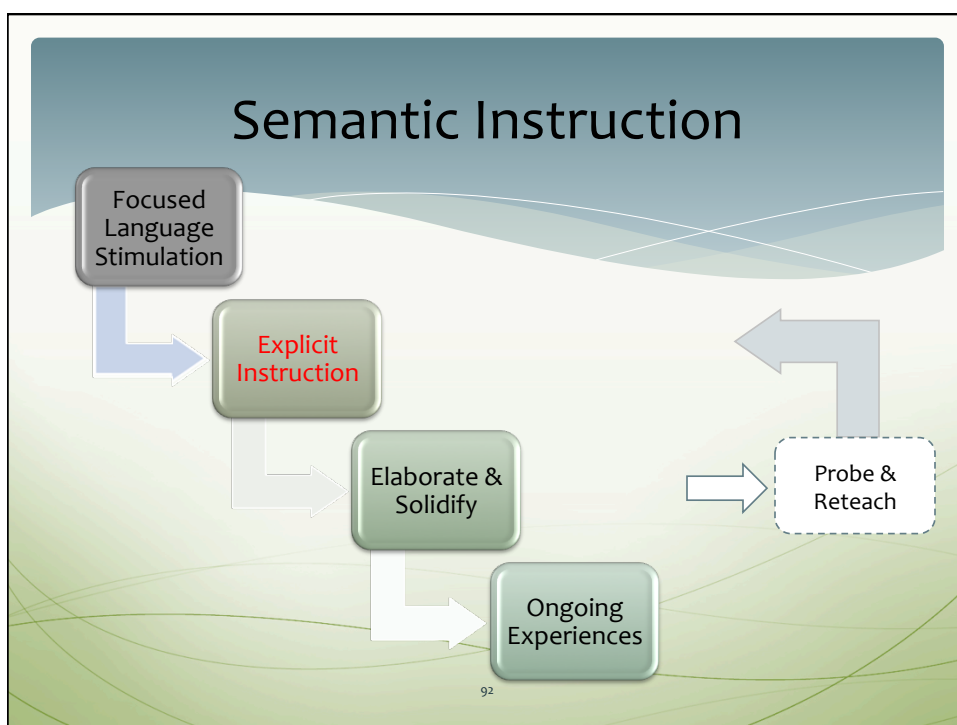
Identify books that will help you highlight your target words:

- \* attention
- \* cozy
- \* dizzy
- \* scold
- \* wound

90

AAC  
=  
Always  
Available for  
Communication

4/16/16



# What is Explicit Instruction?

## Key Elements

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

93

## Activities in This Phase

- \* Designed to **make the primary meaning clear**
  1. Working with definitions
  2. Using contrastive examples
  3. Building graphic organizers
- \* Promote **metalinguistic knowledge**
  1. Word consciousness
  2. Self assessment
- \* **Refine and clarify the meaning**

Highly  
interactive;  
Steeped in  
dialogue

94

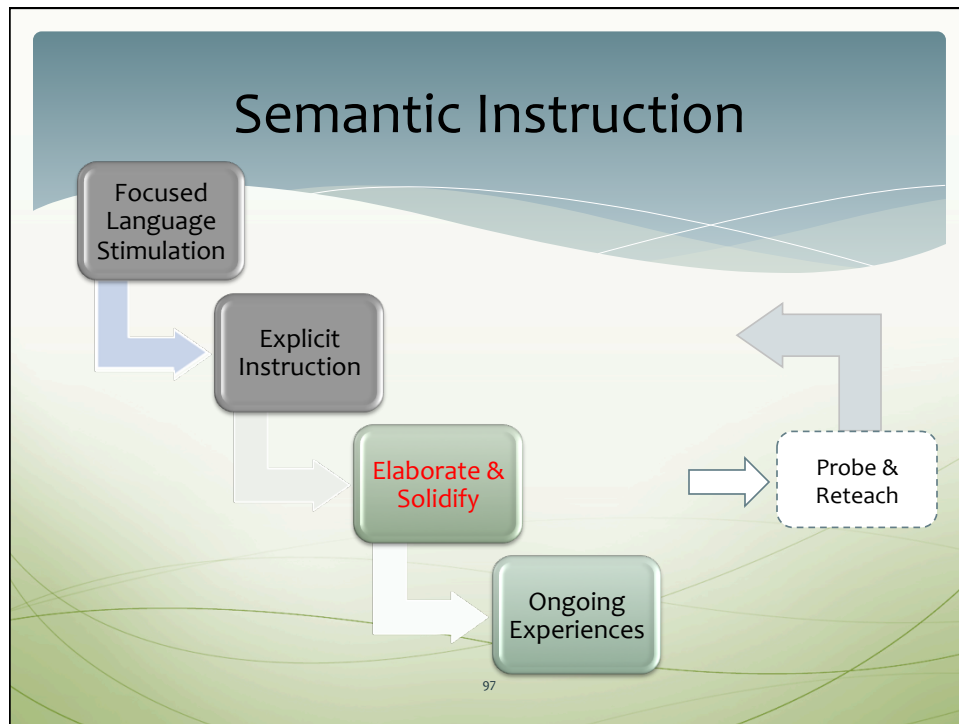
# Memorization

“Learning new concepts requires **active involvement** rather than passive definition memorization.” (Stahl, 1986)

**Supplement with Engaging Activities**

The collage features three main educational resources:

- Dictionary Page:** Shows the entry for 'banish' (băn'ish), a verb meaning 'To force to leave a country or place; exile.' It includes a sample sentence: 'I do not know whether Father Linares saw it again or not, but I do know that while it lived there in the sea it lost the claws and forked tongue and the evil smell. It became the most beautiful I have ever seen. Yes, beautiful. And still I have ever seen Father Linares banished from...'.
- Lesson 1 Page:** A worksheet titled 'Lesson 1' with the instruction 'Study each word and its meaning.' It lists words like 'ambassador', 'athlete', 'brag', 'chant', 'superior', 'victory', 'encourage', and 'competes'. Each word is followed by its definition and a short exercise. For example, 'ambassador' is defined as 'a person who represents his or her government in another country' and the exercise asks 'Our choral group acted as ambassadors on our tour of Germany.'.
- Keywords Page:** A page titled 'Keywords' with a list of words and their synonyms/antonyms. The words include 'abundant', 'bestow', 'eager', 'fragrant', 'heroic', 'invade', 'persist', 'spectacle', and 'triumph'. Each word is followed by its definition and a list of synonyms/antonyms. For example, 'abundant' is defined as 'present in large amounts' and has synonyms 'plentiful, full, ample'.



### The Elaboration & Solidification Phase

- \* Relatively enjoyable activities that:
  - \* **Solidify** the student's understanding of the word
  - \* **Broaden** their knowledge of the word
  - \* Give them **practice** using the word
  - \* **Build linguistic diversity** (using a greater variety of words)
  - \* Promote generalization of use to new people and settings
  - \* **Give the student some control** over how to learn/practice
  - \* **Provide insight** into what the student knows

## Activities in this phase should:

- \* Serve a **specific** purpose, such as:
  - \* Broadening understanding of how the word can be used
  - \* Understanding the relative value on a continuum;
  - \* Differentiating it from words with similar meanings
- \* Allow us to probe to see what they've learned so that we can re-teach, if necessary

99

## Types of Activities

- \* Word sorts
- \* Judgment tasks
- \* Labeling and matching activities
- \* Sentence substitution & completion activities

100

Repetition  
with Variety

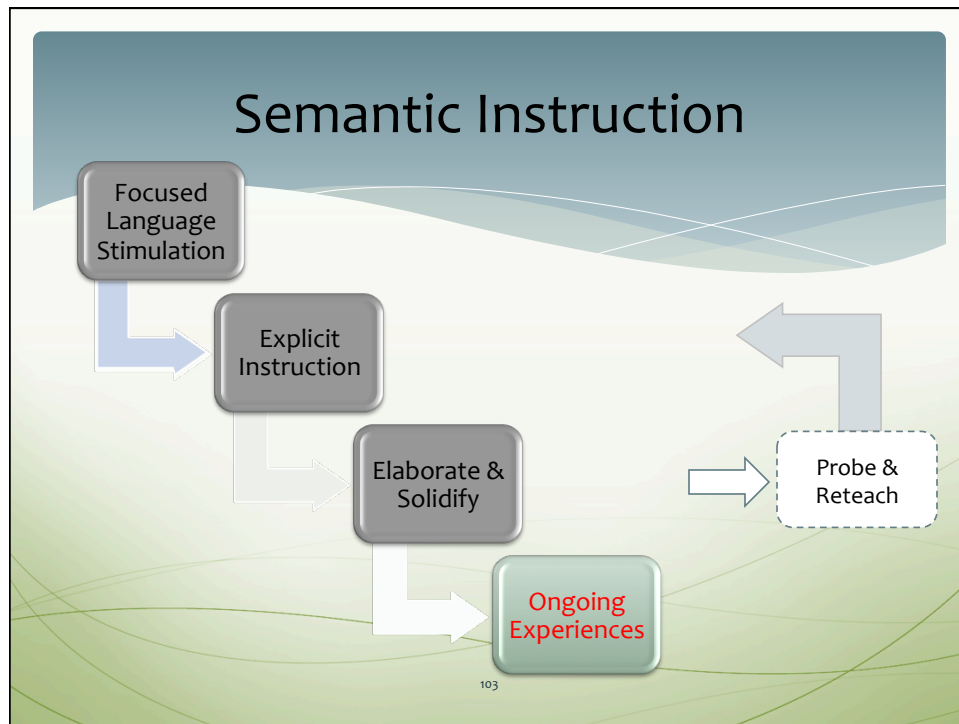


101

Within the activity, probe to  
gauge their understanding.

Re-teach if they are wrong  
or confused.

102



## What is the Ongoing Experience phase?

- \* A period of time when we move onto address NEW words
- \* BUT keep providing opportunities for **receptive exposure** and **expressive use** of the target words

104

\* Weeks 1-2

- \* Target words: effort, sufficient, frustrated
- \* Target words: I, go, more

Black: Tier 2  
Blue: Core

\* Weeks 3-4

- \* Target words: continue, method, gain
- \* Repetition on: effort, sufficient, frustrated

- \* Target words: it, like, get
- \* Repetition on: I, go, more

\* Weeks 5-6

- \* Target words: ambiguous, lack, confused
- \* Repetition on: effort, sufficient, frustrated, continue, method, gain
- \* Target words: he, want, no
- \* Repetition on: I, go, more, it, like, get

105

## Recycling previous vocabulary words



106

## Add new words but...

- \* Don't abandon the previous words
- \* Keep them alive!
  - \* Receptively
  - \* Expressively



107

# LUNCH

108