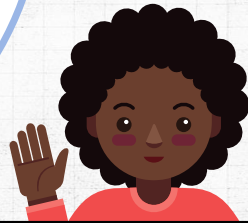


## Using Visual Supports to Enhance Language and Cognition

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First Annual Richard L. Simpson  
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## Typical Cognition & Language Connection

- × Mental processes involved with effective cognition and learning include:
  - Perceiving stimuli (auditory, visual, linguistic)
  - Attention to stimuli for discriminating between relevant/irrelevant information
  - Organizing incoming information
  - Incorporating new information with prior knowledge
  - Making associations and attaching meaning



## Social and Language Processing

- × Children incorporate new stimuli received by comparing to previously known information and developing associative meanings by using:
  - World knowledge
  - Word knowledge
- × Learning new social and linguistic information requires prior knowledge to associate and attach meaning to new concepts/ideas.
- × Allows for association and synthesis of novel information for formulating appropriate responses.



## Social Linguistic Reasoning

- × Attaching meaning to new event-based and language-based information is achieved through the associative processes of manipulating possibilities via:

### Inductive reasoning

- × Bottom-up reasoning: specific observations and gathering the individual details to make broad logical decisions/hypotheses about the general whole
- × Specifics combined to make broad general conclusions

### Deductive reasoning

- × Top-down reasoning: all known information applied to make accurate generalized assumptions (theories) about other specific situations (hypotheses/possibilities)
- × General conclusion to specific premise: combining known truths to make inference



## Typical Symbol Development

x Using mental associative strategies assists in attaching meaning to new stimuli to create learning of referent and symbol relationship.

- Word
- Gesture
- Picture



## Cognitive Processing Differences in ASD

- x Perceptual Differences
- x Attentional Differences (visual attention,
- x Organizational Differences (association/referent)
- x Conceptualization Differences (weak central coherence)
- x Thought/Reasoning Differences (rigid thinking, lack of flexibility)
- x Memory/Recall Differences



## Rationale for Use of Visuals for Thought & Language.....<sup>1</sup>

- x Connects a visual concept to a linguistic concept
  - provides a concrete connection between concept and symbol relationships
- x Needed for attention to salient details of a concept
  - assists in transforming thought (e.g, interpretation of incoming stimuli) into use of symbols to represent concepts (i.e. words and pictures)



## Rationale for Use of Visuals for Thought & Language.....<sup>2</sup>

- x Creates a link of associative features
  - as a visual model of language, enables structured development of early representational thought into vocabulary growth, and further on towards concept relationships
- x Provides organization/structure to the content, message, or learning moment
  - seeks to maximize reciprocal social interactions as adult guides student through use of supporting visuals (i.e. joint attention, joint actions, sending/receiving a message, turn-taking)



# Strategies



## Visuals for Association & Cognitive-Linguistic Organization

### × Category Boards

- provides a visual representation of association based on categorical relationships.
- functions as a basic form of “sorting task” for mental processes of inclusion/exclusion
  - o Teaches thinking related to similarities and differences
  - o Supports improved storage and retrieval of vocabulary based on association
- demonstrates social-linguistic expansion towards a mental organizational strategy for
  - o introducing new concepts in the curriculum
  - o when teaching conversation and topic evolution skills



## Visuals for Expanding Utterance Length

### × Subject-Verb-Object Sentence Board

- Assists in moving beyond basic requesting phrases and scripted echolalic language attempts, with parts of speech clearly defined as salient details
- provide basic sentence form, which creates a bridge for more complex grammatical expansion with novel vocabulary

### × “Wh” Question Boards

- Provides structured teaching of the specific syntactic form required for each question response
- Securing storage and retrieval of correct syntactic forms appropriate for the question response, while also generating relevant vocabulary novel to the situation



## Visuals for Early Problem-Solving

### × “Uh-Oh Board”

- expressing problems through language of “social dilemmas”
- teaches appropriate verbal response to problem situations which require assistance.
- provides framework for cognitive-linguistic processes involved in problem-solving
  - o reference the dilemma shown; identifying salient details
  - o scan and reason/deduce from icon choices
  - o select the correct visual representation
  - o generate the appropriate verbal response to match scenario
- provides organization/structure to the content, message, or learning moment
  - o seeks to maximize reciprocal social interactions as adult guides student through use of supporting visuals (i.e. joint attention, joint actions, sending/receiving a message, turn-taking)



## Visuals for Cause and Effect Reasoning

### × Because Board

- cause/effect thinking taught through language of complex sentence structures to represent rationale or causality

### × Feelings/Because Board

- specific “Because Board” to teach rationale and language models for expressing feelings, sensory/physical state, and/or needing assistance



## Cognitive & Language Growth Through Visual Structure

### × Interactive Language Boards

- naturalistic receptive language learning strategy that involves communication partners use of icons to represent key words as they are spoken (Cafiero, 2005)
- facilitate student interactions and participation (Cafiero, 2005)
- enhance and augment verbal messages



# Thank you!

**Thanks to Rich for being a  
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