Disclosures

- Relevant Financial Disclosures
  - Receiving an honorarium and reimbursement for travel expenses from PSHA
  - Receive royalties from the sale of the Test of Aided-Communication Symbol Performance (TASP) and the Gateway App

Session Objectives

- Assist school-based SLP’s in providing AAC solutions for their students
- Review AAC Assessment Tools
  - Communication Matrix
  - Test of Aided-Communication Symbol Performance
  - AAC Evaluation Genre
- Highlight key components of an AAC Assessment with a focus on AAC symbolic performance
- Benefits of Tangible Symbol Systems for students with severe symbolic limitations
- Review several AAC Apps and devices in terms of how they support IEP Goals for:
  - Syntactic and pragmatic development
  - Classroom participation
  - Mastery of core curriculum standards

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AAC

- Benefits students with a wide range of abilities
- Requires consideration of a broad range of AAC options

AAC Evaluation - The Goal

- The Most Effective Communication Possible
  - Multi-modal
  - Efficient
  - Effective
- Acquisition of a device or App is not always the outcome

AAC System Considerations

<table>
<thead>
<tr>
<th>ALWAYS</th>
<th>NEVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put the student’s abilities 1st</td>
<td>It’s what we use in our school</td>
</tr>
<tr>
<td>Make EFFECTIVE communication the goal</td>
<td>I like ABCApp ...</td>
</tr>
<tr>
<td>Think multimodal</td>
<td>I don’t like</td>
</tr>
<tr>
<td>Build on success ~use what works</td>
<td>His parents want me to ...</td>
</tr>
<tr>
<td>Systematically teach new system</td>
<td>Our District will only buy ...</td>
</tr>
<tr>
<td>Create a long-term plan</td>
<td>123 App is free</td>
</tr>
</tbody>
</table>

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ACC Assessment

• Key Components
  • Identify Communication Needs and Goals
  • Present Communication Abilities and Limitations
  • Cognitive Language Abilities and Limitations
  • Assessment of AAC Symbolic Skills
  • Physical Considerations
  • Sensory Considerations
  • Environmental Factors
  • System Considerations – AAC App or Device
  • Trial with Device
• A series of trials w/ different AAC Apps or devices does not constitute an AAC Evaluation

Identify Communication Needs and Goals

• Talk with Parents and Child’s Team
• Observe Client Interacting
• Survey the Environment
  • Look for barriers
  • Define areas of participation
• What works for the child and what are the identified communication (AAC) needs

Present Communication Status

• Initiates Communication
• Present Communication System(s)
  • Leading
  • Gestures
  • Speech or speech approximations
  • PECS or communication board
  • High Tech AAC system (App or Device)
• Intelligibility
  • Context - Known vs. Unknown
  • Listeners - Familiar vs. Unfamiliar
• Functional Yes/No Response
Cognitive-Language-Considerations

- Communicative Intent
- Receptive Language Abilities
  - Recognition vs Identification
- Expressive Language Abilities
  - Syntactical performance
  - Pragmatic abilities
  - Modes of communication
- Literacy abilities
  - Reading
  - Writing
  - Spelling

Assessing Performance

- Can use formal or informal measures
- Testing enables...
  - Establish a comparative index of children’s strengths and weaknesses
    - If tests are reliable, the examiner can have confidence in the results
    - If tests are valid, the examiner will know what abilities are being evaluated
  - Determine children’s competencies — functional performance level(s) in order to establish appropriate intervention goals
  - Design/select an appropriate AAC system
  - Document progress and/or outcomes

Assessing Language Performance (Formal Measures)

- Receptive Measures
  - Receptive Vocabulary (PPVT, etc)
  - Test of Auditory Comprehension of Language
- Receptive and Expressive
  - PLS
  - TOLD
  - CELF
Which Came First?

Development of Symbolic Skills vs. Using an aided AAC System

Development of Symbolic Skills

- Assign Meaning to Objects and/or Symbols
  - Easily relates to transparent or opaque symbols
- Types of Symbols
  - Tangible symbols, objects / partial objects
  - Photos or cut out photo
  - Visual Scenes
  - Line drawings (Symbol Stix, PCS, Minspeak, etc.)
  - Text
- Enables Generalization

AAC Symbolic Hierarchy

- Object Recognition
- Symbol Recognition
  - Partial Objects
  - Photos
  - Picture symbols
- Symbol Identification
  - Partial Objects
  - Photos
  - Picture symbols
- Literacy Skills
  - Word Prediction
Language Acquisition through Motor Planning

- Rote learning (i.e. learn a motor pattern)
- Routine-based or Context bound
- Functional performance within a structured context
- Easy to reinforce
- May be a path to comprehension

Symbolic Assessment Tools

- Common Objects, Photos, Symbols
  - The Communication Matrix (Pre-PCS)
    - Charity Rowland –
  - Test of Aided-Communication Symbol Performance (TASP)
  - Symbol Size and Number
  - Grammatical Encoding
  - Categorization Skills
  - Syntactic Performance
  - AAC Assessment Genie
    - App assessing ability to use PRC Unity® devices

The Communication Matrix®

- An assessment tool designed to pinpoint exactly how an individual is communicating (Dr. Charity Rowland, 1990; www.designtolearn.com)
- Provides a framework for determining logical communication goals.
- Used to document the expressive communication skills of children who have severe or multiple disabilities, including children with sensory, motor and cognitive impairments.
- Optimal resource for assessing children who can benefit from use of “Tangible Symbols”
What Are Tangible Symbols?

- The symbols are concrete and permanent. They exist in a permanent display and don't have to be recalled from memory.
- They may be manipulated by both the user and the communication partner.
- The relationship between symbol and referent is obvious (iconic) to the individual user, since it is based on the user's own experience.
- Three-dimensional symbols are useful for people without sight, since they are tactually discriminable.

Who Needs Tangible Symbols?

- Individuals who lack the skills to communicate clearly using other abstract symbol systems such as sign language, photos or picture symbols.
- Individuals of all ages with severe cognitive limitations who have the following disabilities:
  - Severe cognitive/language abilities
  - Autism or pervasive developmental disorders
  - Severe vision impairment
  - Severe orthopedic impairment
  - Deaf-blindness
Test of Aided-Communication Symbol Performance (TASP)

- Four subtests assessing AAC Symbolic Skills
  - Symbol Size and Number
  - Grammatical Encoding
  - Categorization Abilities
  - Syntactical Performance
- Uses PCS (BoardMaker®) symbols

Test of Aided-Communication Symbol Performance (TASP)

- Why the TASP?
  - Complements the other components of the AAC assessment process
  - Provides a starting point for designing a communication board or for selecting an appropriate AAC device page set or AAC App
  - Systematic and objective administration procedures result in improved patient satisfaction
  - Serves as a tool to benchmark progress
  - Outcomes yield information on client’s strengths and weaknesses
  - Outcomes can lead to the development of aided AAC intervention goals

Symbol Size and Field Number

- Assesses the number of symbols child can select from on a given page (e.g. 4, 8, 16, 32, 64, 128)
- Helps determine the optimal symbol size
  - Smaller symbols ⇒ more symbols
- Systematically probes for memory for location?
- Utilizes nouns are used for all stimulus items
**Grammatical Encoding**

- Grammatical class rather than “Symbol Set” (e.g., PCS, Symbol Stix) influences symbol recognition and identification.
- Nouns Symbols (i.e., people, objects)
  - Easier to identify than adjectives, verbs, etc.
  - Most commonly used on early boards
- Symbols of other grammatical classes (i.e., verbs, adverbs)
  - Often require teaching
  - Not always included on young children’s early communication displays
- An individual’s ability to recognize symbols needs systematic evaluation & teaching

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**Categorization Performance**

- Directs Vocabulary Organization approach
- Types of Skills Assessed
  - Basic to category exemplar (e.g., dog => animals)
  - Grammatical (i.e., People, Verb, Thing, Place)
    - Visual
    - Auditory
    - Closure

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**Syntactic Performance**

- Assesses client’s ability to form:
  - S-V; S-V-O, S-V-Prep/Adj-O; present progressive, article use (i.e., syntactical performance up to 2.6 year level)
- Test boards range in symbol complexity
- Tasks
  - Imitation
  - Response to Questions
  - Picture Description
Test Outcomes ->
Device/App Considerations

- Define abilities
  - Number of symbols; Symbol Size
  - Grammatical encoding
  - Categorical skills
  - Syntactic performance

- Guide communication board design/device selection
  - Topic vs. Conversational
  - Number of symbols; Symbol Size
  - Grammatical categories of symbols

- Guide Intervention Goals
  - Symbol teaching
  - Expressive language development
  - Categorization

AAC Evaluation Genie App

- Identify skill areas that relate specifically to the language representation methods commonly found on augmentative communication systems
- Does NOT probe for PCS (Boardmaker® or Symbols®) symbol abilities
- There are 14 subtests that can be administered with screening options available for each subtest.
  - General AAC
    - Visual IQ
    - Visual Discrimination
    - Nonverbal Vocabulary
    - Function Vocabulary
    - Verb Vocabulary
    - Category Recognition
  - PRC Unity Products
    - Phon Core Vocabulary
    - Unity core Vocabulary
    - Unity Vocab Patterns
    - Picture Description

Traditional Test or App Evaluation?

- Traditional Test
  - Focused behavior
  - Controlled
  - Score reflects abilities
  - May not be motivating

- App
  - May be motivating
  - Difficult to keep student on task
  - Score may NOT reflect abilities

- Paper + App
  - Opportunity to observe similarities and differences in performance
Post Assessment Considerations for AAC System Selection

- Summative Cognitive Language Abilities - Define Expressive Needs
  - Syntax
  - Pragmatics
  - Participation vs. Mastery of Core Curriculum Standards

- Summative Symbolic Abilities - Define Symbolic Needs & Abilities
  - Number of symbols, Symbolic Size
  - Grammatical encoding
  - Lexical limits
  - Functional performance

- You (just the selected device) define goals and select or configure systems to meet them
  - Topic or Conversational
  - Number of symbols, Symbolic Size
  - Grammatical context of symbols
  - Weight symbols, PICS, Manual Inserts, Eight and Mac Apps, SCOT
  - Establish intervention goals
  - Symbol不出
  - Expressive language development
  - Congruent use

Post-Assessment Considerations

- Acquisition of aided language may both differ and share qualities with typical language development
  - Linguistic
  - Communicative
  - Cognitive processes

- "Planned" vs. "Natural" course (i.e., environment dependent)
  - Possible constraints on intervention - thereby acquisition - caused by prejudices and inappropriate understanding of development

(von Tetzchner, 1998)

"Variables Associated with the Planned Course"

- Adults decide when they provide the child access to his/her communication system.

- Opportunities for communication may be reduced,

- Adults who design their systems select the child's lexicon, device and/or App

- Communication displays may or may not include words across all grammatical classes and they also may or may not include grammatical morphemes.

- Children dependent upon graphic symbols as their mode of communication have few, if any, models for learning to develop language through use of an aided language system.

(von Tetzchner, 1999)
AAC Apps

GoTalk Now
Key Features
- Range of 4, 9, 16, or 25 buttons per page.
- Use photo or any symbol set
- Combine multiple images in a single location.
- Digitized or text to speech voice plus can add auditory cues to any button.
- Create multimedia (video and song) social stories and step-by-step instruction layouts by linking pages with an after action.
- Accommodates goals for communicative functions of requesting, responding, commenting without need for categorization skills

GoTalk Now
Key Features
- Multiple pages and can link buttons
- Message window
- Words but no word morphology features
- Supports early syntactic development with single word and 2-3 word message combinations
**Proloquo2Go (P2G)**

- **Key Features**
  - Crescendo vocabulary
  - Gateway: Vocabulary as In-App purchase
  - Message window w/ speak letter, word or sentence
  - Wide range of grid sizes from 9 - 144
  - Supports language development including use of word endings
  - Color-coding and Fitzgerald Key
  - Requires categorization (e.g., things, activities, Verb subcategories such as making sensory, etc.)
  - Spelling w/ word prediction capabilities

**TouchChat**

- **Key Features**
  - Page sets for early communicators
  - Core word page sets including Word Power and Gateway
  - Message window w/ ability to speak letters, word or sentence
  - Integrated spelling w/ word prediction capabilities
  - Word endings easily added but not developmentally
  - Requires categorization (e.g., things, activities)
  - Programming to customize is easy

**LAMP Words for Life®**

- **Key Features**
  - Uses Language Acquisition through Motor Planning (LAMP)
  - Based upon the P 61 Unity language system
  - Consistent and unique motor patterns
  - Core word Vocabulary (single words)
  - Consistent sequences to speak words
  - Designed for students with autism