Learning Objectives

• Participants will be able to describe the three levels of communication independence.
• Participants will be able to list at least six items used as part of an AAC assessment.
• Participants will state two components of an effective assessment for each level of communication.
• Participants will describe the vocabulary needed in an AAC system to address different communication functions.

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My AAC Philosophy – Magic Formula?

AAC Device Abandonment Research

Individuals – Factors of acceptance: Promotes self-determination, involved in decision making, perceived as having social acceptance, enhances self-image, promotes a sense of identity. (Williams et al. 2006)

Families – Factors of acceptance or rejection: Parent/child play leadership role in the selection of the device, parents play prominent role in teaching child to use device, values/expectations/habits/preferences/goals are respected, instruction is a part of family routine with minimal disruption in daily routines. (Calcagno & Black 2010; Johnson et al. 2006; Cress 2006; Starble et al. 2005)

Initial AAC device use – Factors of acceptance: Response effort, rate and frequency of reinforcement, immediacy of reinforcement and quality of reinforcement, better outcomes when using device. (Johnson, Reichle & Evans 2004)

Speech Language Pathologists – Factors of abandonment: Maintaining/adjusting the system, attitude, lack of training, lack of support, poor fit. (Johnson et al. 2006)
In the long run, family members have far more impact on their child than any professional ever does.

Romich & Zangari 1989

Communication Bill of Rights

All persons, regardless of the extent or severity of their disabilities, have a basic right to affect, through communication, the conditions of their own existence. Beyond this general right, a number of specific communication rights should be ensured in all daily interactions and interventions involving persons who have severe disabilities. These basic communication rights are as follows:

- The right to request desired objects, actions, events, and persons and to express personal preferences, or feelings.
- The right to be offered choices and alternatives.
- The right to reject or refuse undesired objects, events, or actions including the right to decline or reject all proffered choices.
- The right to request, and be given, attention from and interaction with another person.
- The right to receive feedback or information about a state, an action, a progress, or an event of interest.
- The right to active treatment and intervention efforts to enable people with severe disabilities to communicate messages in whatever medium and in an effective and efficient manner that their specific abilities will allow.
- The right to have communication acts acknowledged and responded to, even when the start of those acts cannot be followed by the responder.
- The right to have access at all times to any needed augmentative and alternative communication devices and other assistance devices, to have those devices in good working order.
- The right to environmental contexts, interactions, and opportunities that respect and encourage persons with disabilities to communicate and to take an active role in their own social and personal development.
- The right to be informed about the people, things, and events in one’s immediate environment.
- The right to be communicated with in ways that are meaningful, understandable, and culturally and linguistically appropriate.


ASSESSMENT

- All behavior communicates!
- Focus today is on expressive communication!

Continuum of Communication Independence

| Patricia Dowden, Ph.D., Speech & Hearing Sciences, University of Washington |

- Pre-Symbolic (see next slide)
- Emergent
  - Does not have a reliable method of expressive communication through symbolic language.
- Context-Dependent
  - Uses symbols to communicate, but only with certain partners in certain contexts.
  - Relies on others to supply symbols to use.
- Independent
  - Can communicate on any topic with anyone.
### Assess Current Communication: Interview

- **Current functional communication**
  - Initiate, gain attention
  - Request, ask for things
  - Reject, protest
  - Label, comment, inform, ask, answer questions, etc.
  - Answer yes/no
  - Report or observation of receptive language (discrepancy)

- **What has been tried so far**
  - How many words does the child try to say? What kind of words are they?
  - Sign language
  - Picture communication, AAC systems

- **Speech sound production goals, duration in therapy**
  - Perceived level of intelligibility
  - Use of gestures, point/reach/give/lead/use hand as tool

- **Report or observation of receptive language (discrepancy)**
  - Answer yes/no
  - Label, comment, inform, ask, answer questions, etc.
  - Reject, protest
  - Request, ask for things

### Communication Assessment for Pre-Symbolic / Emergent Communicators

| **Learning Characteristics Inventory (LCI)** | Kearns, Kleinert, Kleinert, & Towles-Reeves 2008 |
| **Communication Matrix** | Charity Rowland 2008 |
| **Communication Signal Inventory (CSI)** | Cynthia Cress 2003 |

### Answers from an Emergent Communicator

| Goal is to "fine-tune"; refer to Communication Bill of Rights. |
| Goal is to increase expressive communication using symbols. |
| Increase the above skills across people and environments. |
| Goal is to build initiation and interest in a communication exchange. |

### Answers from an Independent Communicator

| Usually the child can answer instead of the adult (or demonstrate through communication). |
| Just from interacting with child, you can determine variety of form, content and use. |
| Independence can be with speech, sign, pictures or text-based or a combination and uses different modalities depending on the context. |

### Answers from a Context-Dependent Communicator

| Uses a variety of gestures, in particular, pointing near and far, is an indication of prognosis to learn. |
| May have access, context dependent. |
| May or may not use a symbol. |
| Can be >3 words (depends, can be >300-400 words) |

### Continuum of Communication Independence

| Emergent |
| Context-dependent |
| Goal is to build initiative and interest in a communication exchange. |
| Goal is to build reliable expressive communication using symbols. |
| Increase variety of gestures/MLU |
| Increase the above skills across people and environments. |
| Goal is to build initiation and interest in a communication exchange. |

| Context-dependent |
| Goal is to build speed and efficiency. |
| Goal is to improve access. |
| Goal is to "fine-tune", refer to Communication Bill of Rights. |
Focus of Assessment: What is the child capable of doing?

- Assumption: Speech and language skills
- Vision/visual attention
- Motor
- Cognitive
- Behavioral
- Focus is not device specific!

Capability Profile

- Sensory / Perceptual – Vision
  - What is acuity?
  - How do the eyes move?
  - Does the child gaze shift, extend gaze?
  - Can the child point and look at the same time?
  - Are there light or color sensitivities?

- Sensory / Perceptual – Hearing
  - What is hearing acuity?
  - Does child attend, localize to sound?
  - Does child respond to familiar, unfamiliar voices?
  - Does the child follow contextual and novel directions?
  - Does the child demonstrate sound sensitivities?
  - Does the child hear and understand voice output?
  - Does the child try to verbally imitate what he/she hears?

Motor Access

- Does child show a hand preference?
- Does child initiate motor movements for communication?
- Does child use pre-symbolic gestures (give, point)?
- Can child point to a picture?
- Can child point and look at the same time?
- Has sign language been tried? What was the outcome?
- Is the child sitting or standing?
- What is optimal positioning of the child in relation to the device for optimal attention and access?
- Is this child a direct or indirect selector?

Cognitive

- There are no cognitive "prerequisites" for using an AAC system.
- Does the child understand cause/effect?
- Is the child past the sensorimotor stage of development?
- Grasping with two hands (no handedness)
- Grasping to explore the sound or to mouth
- Grasping to bang or to throw
- Does the child understand symbols?
- Does the child understand concepts of categorization and association?
- What is the child's learning rate, recall and retention?
- How does the child problem solve?
- Can the child consistently answer yes/no to a simple question, "do you want x?"

Attention/Behavior

- Sustained attention to an activity?
- Shift attention between 2 or 3 targets?
- Does introducing another toy/person distract child?

Literacy (consider future need)

- Does the child read? Letters? Words?
- Does the child require spelling for communication?
- Does the child utilize the message window, clear, delete features?
- Can the child learn word predictions?

Initial AAC Assessment:
You don’t need a lot of stuff!!

Primary needs:
- 2 PECS books
- 2 picture books
- Picture boards
- Small switch
- Voice output switch
- SGD – static display
- Tablet - PLQ, LAMP, Touchchat with WP, Soundingboard

Secondary needs:
- Tangible symbols
- Light touch switches
- PODD
- SGD with two switch input

***You will be able to assess if you need a bigger or smaller system based on your initial observations***
Assessment Protocol
- Offer choices – visual, auditory, motor, attention, cognition
- Determine highly preferred item
- Move to symbol assessment – visual, cognitive, attention
  - Photographs / Line drawings on Velcro
  - Photographs / Line drawings on picture board or book
  - Photographs / Line drawings on voice output static or dynamic
- Assess size and array (looking for response effort)
  - If indirect selection, assess for
    - Switch access, alternate access
    - Eye gaze
    - Auditory scanning
    - Yes/no responding

Case Study: Emergent Communicator
- 10 year old
- Mitochondrial disease, epilepsy
- Speech and language disorder
- Vision and motor impairment

Observations / Family Input
(one year of treatment)
- Does not initiate
- Highly preferred – “boy noises”
- Vision – unclear
- Hearing – preferred modality
- Motor – no consistent reach
- Cognitive – can make choices, has cause/effect
- Can smile for yes but not consistently
- Response effort – putting choices on the switch and smiling was too complicated (ruled out 2-switch)
- Frequent neurologic / seizure activity makes it difficult to know what he knows
- Prognosis for medical condition is guarded
- Simple, easy to implement given basic care and medical needs

Results/Recommended System
- Single switch at elbow attached to Step-by-Step by Ablenet
- Switch use
  - Social Scripts: participate in a back and forth exchange
  - Making choices from an auditory scan to
    - Request
    - Ask questions
    - Request social engagement
  - Partner Assisted Scanning (PAS) – 7 seconds
  - Building hierarchy of language complexity
  - Talk, do, play, go, help
  - Choose item from 2-3 within those categories
  - Affirm yes switch to indicate more/all done

Case Study: Context-Dependent Communicator
- 10 years old
- Cerebral Palsy GMFCS IV
- Speech disorder
- Receptive expressive language disorder
- Vision impairment
- Motor impairment
- Estimated symbolic vocabulary of 5 word approximations
- Uses behaviors to meet needs

Observations/Family Input
(3 months of treatment)
- Highly preferred – attention of others, ball
- Vision – unclear
- Hearing – preferred modality
- Motor – can reach in field of 2-3 when highly preferred but will reach indiscriminately and then drop item for attention
- Cognitive – can make choices, has cause/effect, has symbolic language
- Attention – uses loud vocalizations constantly
- System needs to be safely secured to chair
- System needs to allow for appropriate gaining attention
- System also needs to allow for communication in ways that do not disrupt family routines
Results of AAC Assessment

- Auditory
- Indirect selection – two switch step scanning
- Small, portable, strapped to side of chair
- Context-dependent so goal is to expand vocabulary across people/settings
- Functional communication needs
  - gaining and sustaining attention
  - social interaction that does not interfere with household routines
- Core, phrase/whole-message based

Recommended System

- Accent 800
- Two switch
- Auditory prompts
- Two different voices
- Headphones
- Step scanning
- Option to try core

Case Study: Context-Dependent Communicator

- Three years old
- Speech delay
- Expressive language delay
- Receptive language WNL
- Vision/hearing/motor WNL
- Estimated symbolic vocabulary of 40 word approximations or signs
- Context-dependent communicator

Observations / Family Input

- Highly preferred – cars
- Good joint and triadic attention
- No vision, motor, hearing limitations
- Can point to small pictures, can turn pages, can navigate screens
- Defaults to signs
- Doesn’t have full picture “buy in”
- Wants to explore electronic system
- Family found pictures lacking in vocabulary; challenge to cut/paste to add vocabulary; electronic system with "dense" pre-programmed vocabulary will be easier

Recommended Systems

- Picture book with core/fringe vocabulary
- Organized by context
- Aided Language Stimulation
- Time delay, fake confusion with signs or expansion on signs
- Family had 10 inch tablet
- Touchchat with Word Power
- Structured exposure to tablet
- Dyadic communication, no third element

Take Homes: Assessment

- An AAC assessment is more than just selecting the right device
- Parents need to be included in the assessment process
- School teams need to be included in the assessment process
- Find preferred modality: visual, auditory, motor
- Look for dyadic and triadic attention, sustained attention
- Look for response effort – where does child turn away
- Foundation of gestures – pointing, yes/no
- If you don’t know what the child is looking at, vision may not be good communication method
- Don’t forget – auditory modality may be stronger than vision or motor
- Look at how the child plays – sensorimotor, symbolic, etc – how that may interfere with picture use
- Be careful with a recommendation for sign language (discussion below)
**Intervention**

- Think about Continuum of Communication Independence
- Think about Communication Bill of Rights
- Think about generalization in every lesson, how your therapy is training other people
- Consider how student can access general education; depends on type
  - Inclusive classroom
  - Self-contained classroom
- Think about your materials, why you are designing games/activities for speech therapy time
  - SLPs in clinics/hospitals/early intervention
  - SLPs in schools
- Consider what is age appropriate

**Intervention: Gestural Communication**

- If emergent, build a foundation of gestures
  - Body movements
  - Reaching (not just for object)
  - Pushing away
  - Pointing (near, far)
- Teach a natural yes no response
  - Think about response effort
  - Find one “no” item or one “yes” item

**Intervention: Sign Language**

**Strategies to Teach Advocacy**

- Not just about requesting basic needs for things
  - e.g. food/toys, bathroom
  - Reject/protest
  - No, stop, don’t, let’s go, go away, break, quiet, all done, want
- Advocacy to bring child’s system back to equilibrium
  - Sensory needs
  - Functional Communication Training (FCT)
  - Durand and Carr 1985

**Functional Communication Intervention: A E I O U**

- Advocacy
- Empowerment
- Initiative
- Ownership
- Use beyond requesting

**Not all of these strategies apply to all kids**
Strategies to Teach Empowerment

- Being the “boss”
- Directing others
  - make fart sounds, jump, go, stop, make it crash
- If you had no toys or foods, what would motivate the child?

Strategies to Teach Initiative

- Get rid of verbal prompts
- Use gestural prompts, time delay, expectant looks
- Use environmental arrangement
- Vocabulary
  - Hey, come here, look, calling a person’s name

Strategies to Teach Ownership (aka “Buy-in”)

- PECS Phase II: Distance and Persistence
  - Frost and Bondy 1994
- No verbal prompts
- Physical support if necessary
- Pick up, carry, wear
- Preferably hands free
  - belt strap, clip, shoulder strap

Strategies to Teach Use (beyond requesting)

- Labeling
  - People, movie characters
- Commenting
  - Oh no, that’s silly, uh-oh
- Sharing information
  - Places
- Asking questions
  - Scripted for social engagement
  - Guided exploration / acknowledge versus honor

***Teach people and places***

My Favorite Goal

- Child will do x at least 1x/person/day/setting for a total of 5x/day.
  - e.g. use AAC system to advocate for their needs
  - e.g. use AAC system to label, comment, inform
  - e.g. use AAC system to ask a question
- The responsibility is on the team to meet this goal by providing opportunities to use.

Technology alone does not make a competent communicator any more than a piano makes a musician or a basketball and a hoop make an athlete.

Beukelman and Mirenda 2002