Domains of Assessment in Augmentative Communication and Feature Matching to Patient Needs

John M. Costello, M.A., CCC-SLP
Director, Augmentative Communication Program
Children’s Hospital Boston
John.costello@childrens.harvard.edu
http://www.childrenshospital.org/acp

When doing an assessment with person with complex communication needs, remember…….

“Our Lives Teach Us Who We Are”

Salman Rushdie
Before you determine a person does **NOT** have a skill or competence - **presume** you assessed it wrong!

All People Communicate

“...we have discovered increasingly that communication has only one prerequisite; and it has nothing to do with mental age, chronological age, mathematical formulae or any other models that have been developed to decide who is a candidate and who is not. That is because breathing is the only prerequisite that is relevant to communication.”

Pat Mirenda, 1992
“As long as people consider my brain useless and my facial expressions and sounds meaningless, I was doomed to remain voiceless”

Ruth Steinkraus-Mercer

AAC ≠ Technology

AAC assessment: WHY It is NOT to choose a tool or device
Goals for introducing AAC

- Equalize the Gap...
- Promote greater participation
- Enhance vocational opportunities
- Promote interpersonal interactions
- Reduce frustration associated w/ comm. failure
- Enhance language comprehension
- Facilitate speech development
- Serve as an organizer of language
- Enhance speech intelligibility or perception

Definition of 8 Hour Non-speaker

The term eight hour non-speaker refers to individuals who speak but the intelligibility of their speech is influenced by the familiarity of the listener and the content (especially familiarity and technical nature) of the expressed information. Accordingly, the person considered an eight hour nonspeaker is understood by familiar listeners (most often includes persons from the home environment) and experiences communication difficulties during the ‘eight hours’ they are at work, school, etc.
My first questions in every assessment:

• What is MOST motivating to him/her?

• Is s/he frustrated with communication breakdown?

If you focus on the needs/motivations/frustrations of others - you are doomed!

Augmentative and Alternative Communication:
Profiles of AAC Candidates and Strategies
Many communication techniques that must be considered

Patient video or photos

Patient video or photos
**Patient video or photos**

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**Emerging Communicator**

**Case example:**
- **Pediatric:** 7 year old
  - DL: Miller-Deieker Syndrome, severe disfigurement, severe motor impairment, possible seizures and hearing impairment. No speech. Communication will need to develop in the environmental and receptive modes.

- **Adult:** 47 year old
  - DL: Severe to profound intellectual impairment, ambulatory, as concerns with hearing may be an issue. Needs an institutional setting with no community exposure for his months. Does not demonstrate symbolic knowledge, behavior is interpreted by others for communication.
Emerging:

An "Emerging" communicator does not have a RELIABLE method of EXPRESSIVE communication through SYMBOLIC means

- communication
  - Facial expressions
  - Body language
  - Gestures and vocalizations or other non-symbolic communication

Emerging:

Emerging Communicators do not have the tools to communicate beyond the "here and now". They do not have a method of expressing symbolic communication reliably.

This may NOT be due to intellectual ability but may be related to OPPORTUNITY

Goals should focus on:

- providing the individual with both the means and opportunities to communicate effectively with an increasing number of communication partners and
- determining preferences
- focus on developing causality, means-end understanding and intentional communication
- fostering symbolic communication learning through structured and incidental opportunities
- engineering environment to support opportunities
- learning about unintentional and intentional
Overall, intervention for the Emerging Communicator must focus on:

• establishing the first method of reliable symbolic expression,
• increasing opportunities for interaction with diverse partners
• expanding communication beyond “here and now” topics.

According to Blackstone and Hunt-Berg (Social Networks), an emerging communicator

• may use a few rote signs or utterances or a very limited voice output communication device, but these communicative forms are also used inappropriately at times.
• is unable to communicate concepts beyond the “here and now” unless their partners have shared experiences, can guess their intent and/or set up highly structured and artificial trials.
• In some cases, the individual may be capable of considerable symbolic expression but has not been provided a system that meets his/her motor, visual or symbolic requirements.
• In other cases, the individual does not yet function at a symbolic level. These individuals may use body language to communicate yes/no for acceptance or rejection, but there is no reliable use of yes/no signals for communication beyond the immediate context.

The term “emerging communication” is not intended to describe the individual’s potential. It only refers to current communication strategies.
Object temptations

Light box with “choices”
Some will need time and support to make the cause-effect connection.

Break down the task into steps.
Ablenet Timer allows for single switch participation in cooking and preparing food by texture.

II. Context Dependent:

A "Context-Dependent" Communicator SYMBOLIC COMMUNICATION that is RELIABLE, but it is limited to particular CONTEXTS or PARTNERS.
What might keep someone from advancing to "independent"?

- Limited spelling ability
- Vocabulary - for only particular contexts
- Vocabulary - not personal or useful
- Limited experience with new partners
- Limited opportunity to practice communication in natural contexts
- Hidden hearing impairment
- Hidden vision impairment
- Mismatch of device and motor control
- Fear of AAC techniques
- Low expectations of other people
- Lack of opportunities to communicate
- Lack of AAC service

According to Blackstone and Hunt-Berg (Social Networks), a Context Dependent Communicator is an individual who:

- has reliable symbolic communication but may still be limited to specific contexts or partners for two reasons:
  - First, some individuals can communicate only with highly familiar partners because they rely on severely unintelligible speech or customized communication strategies, which require partner familiarity.
  - Second, some individuals are able to communicate only in limited contexts because they do not have access to sufficient and/or appropriate vocabulary.
- Are unable to spell well enough to generate novel utterances, so they are dependent on others to select and pre-program vocabulary for them.
- May rely on prompts from others, may not recognize unfamiliar people as valid communication partners without modeling/support.
- May not try to communicate in some situations due to lack of vocabulary and lack of confidence of success.
• AAC Intervention must focus on:
  • Increasing access to vocabulary and symbolic knowledge
  • Increasing use of AAC strategies
  • Decreasing dependence on others and developing *language and literacy skills* to maximize communicative independence.
Context dependent topic boards

Patient video or photos
Goals for Context Dependent Communicator:

- increasing participation with familiar and new partners
- increasing the range of topics
- increasing lexical diversity
- integrating all available methods, symbolic and non-symbolic, into a repertoire of effective communication strategies for the individual.
- growing operational, social, linguistic and strategic competence
- expanding communication environments and pragmatics of use

Context dependent topic boards
According to Blackstone and Hunt-Berg (Social Networks) Independent Communicator

- Can interact with both familiar and unfamiliar partners about any topic
- Can communicate in any context
- Typically literate
- Can communicate novel messages (vs. pre-programmed messages)
- Often demonstrate great linguistic diversity
- Often use AAC for more than speech output only, thus may also use AAC for:
  - Internet
  - Email
  - Texting
  - Telephone
Goals should focus on:
• Improving operational competence with AAC technologies
• Providing rate enhancement strategies
• Expanding communication options (e.g., email, Internet access, etc.)
• Other goals may include refining social interaction skills
• Increasing access to people in their fifth circle (less familiar partners according to Social Networks)
• May focus on increasing participation in
• Activities related to employment and education and community
Important assessment consideration:

Communication Partners and different strategies used with different partners
You have already reviewed ‘Social Networks’

Social Network
1. Life Long Partners
2. Close Friends and relatives
3. Acquaintances
4. Paid workers
5. Unfamiliar people

• Emerging Communication Group
• Context Dependent Communication Group
• Independent Communication Group
Emerging: not yet use symbolic communication
- Facial expressions
- Body language
- Gestures and vocalizations or other non-symbolic communication

Context-dependent
- Has reliable symbol communication but limited to specific context or partners
- May only have vocabulary that supports success in limited environments.
Feature Matching Process:

Identify an individual’s strengths and needs and match those to available or potentially available AAC features/strategies

Want a recipe for assessment?

Yes…..so do I !!!!!!
Members of the AAC Team may include:

- Person who uses AAC and family
- Speech-language pathologist
- Occupational therapist
- Physical therapist
- Physicians of various specialties
- Rehabilitation engineer
- Educator
- Social worker
- Psychologist
- Vocational counselor
- Ophthalmology
- Audiology
- Orthopedists
- Manufacturer/distributor

Evidence Based Practice

PRACTICE BASED EVIDENCE
Meaningful and functional trial of Device/strategies

Sample trial data points:

- Initiation
- Prompting required
- Diversity of communication partners
- Use of language functions beyond request
- Ability to navigate through page set organization with intent
- Responsibility/ownership of system

*** would have custom data points for each user of AAC
**Purpose of Communication**

*Light, 1988*

- Communication of needs and wants
- Information transfer
- Social closeness
- Social etiquette

**Communicative Competence**

- Linguistic
- Operational
- Social
- Strategic

*Toward A Definition of Communicative Competence*

Janice Light, 1989, *AAC V5, #2*

**Communication System**

- Technique
- Symbol set
- Communication behavior
- Unaided
- Aided
- Lite tech
- High Tech
- Integrated/Dedicated
Communication System

**Technique**

- Unaided
  - Speech
  - Gestures
  - Signs language
  - Facial expression
  - Body posture

- Aided

  - Lite tech
    - Picture displays
    - Letter board
    - Portable voca
  - high tech
    - Dedicated system
    - integrated system

Communication System

**Symbol set**

- Unaided
  - Gestures
  - Vocalizations/speech
  - gestural codes
  - Manual signs

- Aided

  - Tangible symbols
    - real objects
    - miniatures
    - partial
    - texture associations
  - Two dimensional
    - photos
    - line drawings
  - Standard orthography

Communication System

**Communication Behavior**

- Request
- Comment
- Give information
- Get information
- Express emotion
- Conversation
- Choose
- Refuse
- Etc.
Population considerations

- Time of onset
  - Congenital
  - Acquired

- Length of disability
  - Temporary
  - Permanent
    - 8 hour nonspeaking condition
    - 24 hour nonspeaking condition

Types of Encoding

- Memory Based
  - Color coding
  - Alphabet encoding/letter encoding (traditional orthography, morse code, etc.)
  - Abbreviated expansion
    - Truncation
    - Contraction
  - Numeric encoding
  - Letter category encoding
  - Logical letter encoding/salient letter encoding
PARTNER ASSISTED COLOR/NUMBER ENCODING

Patient video or photos

Color code/color-number code
• **ABBREVIATED EXPANSION**
  - **Contraction**: most salient letters (omission of vowels fr/ from, vb/verb, gf – girlfriend, hmbg – hamburger, etc.
  - **Truncation**: first few letters only (coop for cooperation, comm. For communication, etc.

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**Logical Letter Encoding/ Salient Letter Encoding**

• A logical relationship exists between the key words of the phrase or sentence and the code selected

  • **V M** = Voglio mangiare per favore
  • **C J** = Mi chiamo John

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**Semantic and Conceptual Encoding**

• Minspeak
• Visual Motor encoding
• Graphical Metaphor
Chart based and Display Based Encoding

Resource: http://www.cini.org
Selection and Transmission Techniques

Transmission Techniques

- Direct selection: (finger, pointer, headstick, HeadMouse, eye link, etc.)
  - pressure - touch exit
  - Dwell time - touch enter
- Scan
  - Linear - latched - row-column - group/item
  - Assisted - auditory/partner assisted
  - single/two switch scan

Patient video or photos
Scan
- Linear
- Stepped
- Latched
- Row-column
- Group/item
- Auditory
- Partner assisted
- Single/two switch scan
Effective switch use:

- On
- Off
- Wait
**Domains of Assessment**

**AAC Assessment: Purpose**

- Determine how an individual currently communicates
- Determine barriers to successful communication
- Identify gaps between receptive and expressive skill (communication breakdown)
- Identify appropriate aided and unaided techniques through feature matching*
- Support communication behavior through instructional strategies
**Feature Matching Process:**

Identify an individual’s strengths and needs and match the individual’s features to available or potentially available AAC features/strategies.

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**Feature Matching Process**

A Function of:

-Domains of Assessment
-Profile of user needs
-Available hard- & software options
-Available Instructional Strategies

*Making more informed choices by identifying features that need to be addressed and then matching those features to available or potentially available AAC strategies.*

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**AAC Assessment: Process**

-Domains of assessment
-Environmental considerations
-Introduction of AAC techniques
-Functional trial/intervention - Evidence Based Practice
The expected outcome of the feature matching process:

- Determination of candidacy for augmentative communication
- Identification of candidacy for aided versus unaided versus hybrid approach
- Strategies for supporting speech production and intelligibility including assisted speech aids (amplification, cues, etc.)
- Instructional strategies for aided/unaided and speech strategies
- Referral to appropriate resources

Historic Domain

- Previous communication intervention
- Previous AAC techniques
- Medical history
- Social history
- Environmental history
- Educational history
- Vocational history
- Length of time - static/progressive

Patient Centered Domain

- What does the patient want?
- What are his/her priorities?
- What does the patient expect of you?
- What is the patient’s personality?
Guidelines for Focusing on Mutual Respect

Patient video or photos

"I'm Doo" replied our little man.
"I'm Tummy"
"I'm Sleepy"
"And he's Happy" they all chanted together, "He never talks."
FEATURE MATCHING
PATIENT CENTERED DOMAIN

EVALUATION AREA
Primary and Secondary Consumer/User goals and priorities

METHOD OF ASSESSMENT
Interview
√ short term goals
√ long term goals
√ priorities
√ a priori expectations of team
√ expectation following completion of evaluation

POTENTIAL EFFECTS ON FEATURE MATCHING
Exerts Influence throughout decision making process
Observe
Educate, especially when expectations do not match assessed ability

How Right Was Our First Guess?
Cindy Cottier
ASHA, 1993

How Right Was Our First Guess?
Cindy Cottier, ASHA 1993

Elementary Age 5 - 12
N=32

Original 63%
Different 25%
No device 12%
How Right Was Our First Guess?  
Cindy Cottier, ASHA 1993

Middle School  
Age 12-15  
N=26

- DID device 22%  
- Original 15%  
- Different 62%

How Right Was Our First Guess?  
Cindy Cottier, ASHA 1993

High School  
Age 15-22  
N=18

- NO device 44%  
- Different 56%

AAC and Privacy
Medical Domain

- Overall medical diagnosis
- Presence of seizures/medications
- Otolaryngology
- Orthopaedics
- Ophthalmology
- Psychiatry
- Neurology
- Nutrition
- Sleep pattern

Considerations:
- Course
- Static/progressive
- Impact on reflex patterns/
- Positioning of technology
Patient video or photos

Orthopedics

- Impact of orthopedic status on functional access
- Impact of bracing on functional access

Ophthalmology

- Impacts as described under sensory
- Impact of functional participation (patching, drops, etc.)
Psychiatry

- Impact of psychiatric status on interest/willingness to communicate
- Differential diagnosis
- Counsel – voice banking (ALS)

Neurology/
Seizure activity

- Impact on attention/focus
- Impact on alertness
- Impact on variable performance
- Impact on switch/device placement

Medications
Assessed through:
- Trial
- Medical indications
- Observation

Questions to ask:
- What are they/what are they for?
- How long have they been taken?
- Are they therapeutic?
- What changes do you see before/after admin?
- Were they taken today?
- Impact on attention/focus
- Impact on alertness
- Impact on variable performance
- Impact on switch/device placement
- Impact on tone
- Impact on behavior
- Impact on communicative intent
Nutrition

- Influence on awareness/fatigue level
- Introduction of G-tube may influence reassessment of skills

The feeding tube decision:
* a mother’s perspective

The feeding tube decision #2:
* a mother’s perspective
Sensory Domain

- Vision
- Hearing
- Tactician
- Olfactory

static/progressive

** tomorrow CVI

Management of Sensory Impairment in Augmentative and Alternative Communication

Lloyd, Wasson, Blichak
Purdue University
ASHA Presentation, 1994

Risk factors for vision and hearing impairment

- In-utero exposure to: Rubella, Cytomegalovirus, toxic drugs, untreated material syphillis, toxapainoids, Herpes, Diuretics
- Low birth weight
- Jaundice
- Meningitis
- Mental Retardation
- Exposure to toxic drugs
- Familiar disposition

- Prenatal anoxia
- Craniofacial anomalies
- Cerebral Palsey
- Head Trauma
- HIV infection
- Aging
- Genetic syndromes such as Down Syndrome Turner, Crouzons, Treacher Collins, Hurler’s, etc.
**Visual (processing)**
- **Observation**
  - Influences the layout:
    - Size of symbol set
    - Number of symbols on display
    - Foreground/background
    - Font Type and size /Boldness of Print
    - Distance between symbols
    - Use of color or black and white

**Visual (presence of field defect)**
- **Observation**
  - Progressive/static

  Influence :
  - Placement of Materials/Symbol set
  - angle of materials

**Functional Vision Assessment**
- **Visual acuity**
  - Ability to resolve detail and recognize objects
  - Effects of glasses
- **Contrast sensitivity**
  - Ability to detect low contrast (important for picture perception and mobility)
- **Visual field (peripheral vision)**
  - Ability to detect objects to the side
Functional Vision Assessment (continued)
- Color vision
- Visually guided fine motor skills
- Visually guided mobility
- Fixation stability
- Search behavior
- Gaze behavior
- Eye-head posture
- Eye movement problems
- Visual attention
- Binocularity
- Depth perception

Practitioners involved in Assisting Persons Having Visual Impairment
- Pediatric Ophthalmologist
- Optometrist
- Low Vision Instructor
- Vision Educator
- Orientation and Mobility Instructor

Motor Domain
- Seating
- Positioning
- Quality of Ambulation
- Controls
  Strength/Fatigue
Seating and Positioning

- Breath support for vocalizations/speech production
- Stability for consistent and reliable control site/access strategies
- Range of motion
- Eye contact/socialization
- Comfort and security decreases fatigue level
Seating and Positioning Considerations

• Optimizing seating
  – Pelvis
  – Trunk
  – Head
  – Arms
  – Feet

***This is not just for people in wheelchairs but applies to all seating arrangements

Hands
Potentially large range and fine resolution

Advantages:
• In field of vision
• Greater sensation in hands
• Easier to mount/stabilize input or device

Disadvantages:
• Reflective posturing forward
• Eye-hand inseparation
• Suspended arm versus supported arm
• Release difficulties
• Triggers reflex patterns
Using one category cue

Advantages:
• Less movement required
• Less visual distractions
• Easy to position at least three switches
• May encourage upright position

Disadvantages:
• ATNR response
• Eyes may shift toward switch
• May not be able to separate head and eye movement
• Headrest may interfere
Patient video or photos

Advantages:
- Low profile look
- Potential for proportional control

Disadvantages:
- May be visually distracting to communication partner
- May be difficult to mount/position
- Resting place/stabilization of foot may be problematic
- Unintentional activation when excited

Feet
Large range and gross resolution
Laura

Patient video or photos

Arms/Elbows/Legs/Knees
Small range with gross resolution

Advantages:
• Less movement required
• Less visual distraction
• Elbow increases trunk and head extension
• Easier to stabilize
• Low profile

Disadvantages:
• May be difficult to do unilaterally
• Person may rest on switch
• Unintentional activation when excited
• Reflex movement can sabotage
Speech Domain

• Production variables
• Intelligibility
• Self perception of intelligibility
• Congenital versus acquired

Motor Speech Domain

**Neuromotor Speech Disorders**

• Apraxia of speech
• Dysarthria
• Differential Diagnosis
Apraxia of Speech

- Sensorimotor speech disorder resulting from brain damage. Symptoms are impaired volitional production of normal articulation and prosody. These symptoms are not results from abnormal strength, tone or timing or from Aphasia, confusion, general intellectual deficit or hearing loss. Rather, they result from inhibition or impairment of the neural programming of skilled oral movements.

Dysarthria

- Impairment in the functioning of the musculature of respiration, phonation, resonation and articulation due to lesion or lesions to the peripheral nervous system, central nervous system or both.

  - Lesion:
    - Lower motor neuron: flaccid
    - Upper motor neuron: spastic
    - Basal ganglia: shaking/writhing, involuntary movement known as tremor, as seen in Athetoid type CP, Parkinson’s disease, Huntington’s disease
    - Cerebellar region: Ataxia (impaired balance, slow movement, inaccurate movement, hypotonia)

Speech Intelligibility

- Context
- Content & Complexity
- Familiarity
Definition of 8 Hour Nonspeaker

• The term eight hour non-speaker refers to individuals who speak but the intelligibility of their speech is influenced by the familiarity of the listener and the content (especially familiarity and technical nature) of the expressed information. Accordingly, the person considered an eight hour nonspeaker is understood by familiar listeners (most often includes persons from the home environment) and experiences communication difficulties during the ‘eight hours’ they are at work, school, etc.

Evaluating Intelligibility

• “Hidden Picture” Test
  – Examine Role of Context
  – Introduce Common Nouns
  – Examine Role of Gesture
Self Perception of Intelligibility
- Self report
- Tape recording
- Telephone trial with speaker phone

AAC AND SPEECH FACILITATION
Actual:
Research and Clinical Observation
Seen across diagnostic categories - especially CP and Autism
* expect a decrease in speech initially
* continues as primary parental concern
Perceived:
Increased context provided

Patient video or photos
Language Domain

- Demonstrating linguistic competence
- Impact of language used in assessment
- Impact of speech style of examiner
- Test modification
- Co-existing conditions
- Motivation to ‘prove’ skill

Modification of Standardized Measures
Test Modification

• Rationale
• Caution
• Examples
  – Enlarge
  – Space
  – Additional coding strategies
  – Computerized (symbol empty versus pre-stored info)

Aided Language Stimulation

Goossens\(^1\) (SEAC Proceedings October 2001) sited comprehension data suggesting the need to provide language models and aided language opportunities to cognitively young children.

• By 15 months toddler understands an average of 50 different words
• By 18 months 100 - 150 different words
• By 18 - 24 months 150 - 500 words - Chapman, 1978
Motivation of Task/
Motivation of Vocabulary

Who makes the rules anyway?

Patient video or photos
Who makes the rules anyway?

- Throws items to eliminate the undesired choices
- Chooses each one and leaves desired item
- Will look at/stare at desired choice
- Will make choice only when sitting down
- Is dependent on a specific cue and does not respond to similar or related (e.g., "touch what you want" versus: show me what you want, point to what you want, what do you want, etc.).

INTERPRETED DOMAIN

Observation
Interview
Analysis of antecedent-behavior-consequence paradigm
Communication profile
Influence

Patient video or photos
The business of being politically correct requires constantly shifting loyalties. For example, the concept of age appropriate has an interesting history. We need to remember that this term began as an injunction upon people providing services but has gradually become a burden to be borne by the people with different abilities themselves. At first, in response to the misconception that people with learning disabilities were eternally children, people were reminded that their respectful friends regarded them as being their actual chronological age. This meant that for someone’s 25th birthday - even if the person had been assessed as having a ‘mental age’ of 2 - one wouldn’t presume to buy a plush toy. This has subsequently become a prohibition for the person, however. So an adult who likes trains or dolls is not “allowed” to have them. What began as a way of saying “Let’s make sure we don’t insult a group of people who have been insulted enough” has become a practice that says: “Don’t do what you want or be who you are. It embarrasses us.” - Herbert Lovett
Learning to Listen, 1996

How do we know how to support and recognize a person’s true personality?

COMMUNICATION PROFILE

Nonverbal Communication
Developing a communication profile

Educational Domain

- History
- Learning Style
- Literacy
- Learning Disability
- Achievement Level
- Curriculum Focus

EDUCATIONAL DOMAIN

- Standard measures
- Nonstandard measures
- Assessment procedures
- Influence
  - Developmental levels
  - Influence on symbol set selection
  - Influences coding and retrieval strategies
  - Influences on communication strategies
  - Influences on rate of communication
  - Influences expandability of system selected
  - Influences output considerations including visual display and printer options
  - Influences need for speech feedback/readback
  - Influences use of text highlighting
  - Influences consideration of a multipurpose versus dedicated device
  - Influences storage requirements
Cognitive Domain

- Levels of representation
- Abstraction Ability
- Intellectual ability
- Memory
- Nature versus Nurture

COGNITIVE DOMAIN
Standard measures
Nonstandard measures
Procedures
  √ Arousal
  √ Attention
  √ Executive functions
  √ Problems solving

Influence:
  • Influences use of active stimulation procedures
  • Influences use and type of cueing strategy
  • Influences level of representation
  • Influences language used for instruction
  • Influences consideration of rate enhancement strategies
  • Influences organization of system

Wh- question acquisition:

<table>
<thead>
<tr>
<th>Question form</th>
<th>Age acquired</th>
<th>concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes/no</td>
<td>2.0</td>
<td>identify</td>
</tr>
<tr>
<td>What + be</td>
<td>2.0</td>
<td>action</td>
</tr>
<tr>
<td>where</td>
<td>2.6</td>
<td>location</td>
</tr>
<tr>
<td>why</td>
<td>3.0</td>
<td>Cause/effect</td>
</tr>
<tr>
<td>How (many, soon, big, etc.)</td>
<td>3.6 - 5.6 (size)</td>
<td>Manner/ description</td>
</tr>
<tr>
<td>When</td>
<td>5.6</td>
<td>time</td>
</tr>
<tr>
<td>Which</td>
<td>5.6</td>
<td>selection</td>
</tr>
</tbody>
</table>
Representations
(not an absolute hierarchy!)

- Objects
- Object to object
- Reduced dimensionality
- Two dimensional
- Photographs
- Line drawings
- Symbols

TANGIBLE SYMBOLS
Representations
(not an absolute hierarchy!)

- Objects
- Object to object
- Reduced dimensionality
- Two dimensional
- Photographs
- Line drawings
- Symbols
- Standard orthography (sight words)
- Standard orthography (encode/decode)
- Linguistic acceleration techniques
- Morse code
- Auditory systems
- Tactile systems

Behavioral Domain

- Frustration
- Nature of demonstration
- Learned Helplessness
- Consistent/intermittent
- Psychological relation
- Medical relation
- Antecedents

BEHAVIORAL DOMAIN

- Interview
- Observation
- Communication Profile
- Needs Assessment
- Differentiate behavior secondary to communicative dissonance versus 'not getting what person wants'
- Consider behavior as communicative
- Consider behavior as secondary to frustration with communication breakdown
- Consider behavior secondary to medications
- Influences durability of device/materials
- Influences mounting of materials
- Influences portability/protection of materials
Motivation Assessment Scale
V. Mark Durrand, Ph.D. 1986

- "...designed to identify those situations in which an individual is likely to behave in a certain way".

- 16 questions with a rating scale of:
  never    almost    seldom    half the    usually    almost    always
  0          1              2              3              4             5            6

1. Would the behavior occur continuously, over and over, of this person was left alone for long periods of time (e.g., several hours).
2. Does the behavior occur following a request to perform a difficult task?
3. Does the behavior seem to occur in response to your talking to other persons in the room.
4. Does the behavior ever occur to get a toy, food or activity that this person has been told that he or she can’t have.
5. Would the behavior occur repeatedly, in the same way, for very long periods of time if no one was around? (for example, rocking back and forth for over an hour).
6. Does the behavior occur when any request is made of this person?
7. Does the behavior occur whenever you stop attending to this person.
8. Does the behavior occur when you take away a favorite toy, food or activity?
9. Does it appear to you that this person enjoys performing the behavior (it feels, tastes, looks, smells, and/or sounds pleasing.
10. Does this person seem to do the behavior to upset or annoy you when you are trying to get him or her to do what you ask?
11. Does this person seem to do the behavior to upset or annoy you when you are not paying attention to him or her?
12. Does the behavior stop occurring shortly after you give the person the toy, food, or activity he or she has requested?
13. When the behavior is occurring, does this person seem calm and unaware of anything else going on around him or her?
14. Does the behavior stop occurring shortly after (one to five minutes) you stop working or making demands on this person?
15. Does this person seem to do the behavior to get you to spend more time with him or her?
16. Does the behavior seem to occur when this person has been told that she can’t do something she wanted to do?
Motivation Assessment Scale

- Sensory: 1, 5, 9, 13
- Escape: 2, 6, 10, 14
- Attention: 3, 7, 11, 15
- Tangible: 4, 8, 12, 16

Financial Domain

- Insurance
- Responsibility of other agencies (school, vocational rehabilitation, others)
- Private Funds
- Service Organizations
- Fund Raising
Family/Support Domain

- Aid acceptance factor
- Technology Quotient (real or perceived)
- Advocacy
- Abilities and needs of communication partners

Social/Environmental Domain

- Expectations
- Social opportunities
- Consistency of partners
- Peer versus instructional models
- Learned helplessness
- Cultural considerations
Make Me WANT to be Assessed: *Select Strategies* in AAC Assessment

From the Augmentative Communication Program Clinical Staff
Children’s Hospital Boston
http://www.childrenshospital.org/acp

Assessment Dilemma

- Many children are not interested/motivated to show their true competence in context of assessment
- Children with complex communication needs are often repeatedly "tested"
- Children with complex communication needs often have limited opportunity to use or experiment with language
- Can’t develop skill without experience BUT often experience is not made available until child demonstrates skill

Alycia Berg, MS, CCC-SLP

AAC Assessment with Infants and Toddlers
Common Challenges or Misconceptions

- Before participating in low-tech or high-tech AAC Assessment, an infant/young toddler must be able to follow directions.
- It is necessary for the child to understand specific concepts/vocabulary that can be used for communication.
- Voice output is not appropriate for infants and young toddlers.

6 month old

Clinical Assessment goal:
- Switch access and access
- Timed switch access (on - off - wait)
- Turn-taking, social connectedness, anticipation

Clinical tool:
- Step-by-Step recorded with a single message "Peek-a-boo"
- Introduction to low tech eye gaze for symbols
High Tech “Infants” (VIDEO 13-14 months old)

Clinical Assessment goal: Use of an Eye Tracking System

Clinical Tool: (Tobi P10 and Ceye with custom SDPro)

Step 1: Calibration and interaction with the device

Step 2: Navigation of Dynamic page sets to intentionally engage.

*Displays with page links. 4 main targets + go back

Talking Points:

• How to get a 13 month old to calibrate:
• Calibration task- look, hold gaze, and track multiple
  • Not too young…need to be clinically creative and imaginative with set up (he doesn’t need to understand the task to complete it!)
Jessica Gosnell, M.S. CCC-SLP
Impacts of Motivating Vocabulary on Assessments

WHERE’S THE MOTIVATION?

Impacts of Vocabulary

* Non-Motivating Vocabulary
* Non-motivating Communication Contexts

Child rejects the system as it is interpreted as a meaningless academic task and boring task.

* Device Abandonment
* Increased communication frustration
* Wrong Goals
And strategies
Impact of Vocabulary within the Assessment

- **Non-Motivating Vocabulary**
  - Not all kids like Barney, Bubbles, and Blocks
  - Often using pre-stored off the shelf vocabulary that isn’t customized to the child
  - Often don’t know what the child likes until they arrive...then do you have access to that?

Impact of Vocabulary within the Assessment

- **Non-Motivating Communication Context**
  - In an UNFAMILIAR environment
  - With UNFAMILIAR people
  - Often doing UNFAMILIAR THINGS

Impacts of Vocabulary

When the child is not motivated by the vocabulary and vocabulary is not customized to meet the needs of the individual:

- Accused of “not being ready for a communication system”
- “Not willing to use the system”

Therefore...
the idea of their using an AAC system is abandoned.
Ryan, Introduction to voice output

Erica: Diagnosis: Autism
Motivated to communicate highly preferred request
Currently communicates by Physical Communication & Word approximations for highly preferred request
Currently comprehending mostly nouns

Considerations for getting ‘buy-in’ to assessment
• Personally relevant vocabulary in all assessment tasks
• Taking advantage of technology, websites and applications that are often familiar, motivating and already part of child’s environment
My motivation:

- IEP goals and assessment goals we see in clinic:
  - Johnny will communicate a choice from a field of three symbols with 80% accuracy
  - Johnny will identify the appropriate symbol from a field of three symbols given verbal prompts
  - Johnny will match a symbol to a like referent with 80% accuracy
How about…

• Johnny will experience the power of language and the meaning of a symbol through creative and supported exploration of language (not available to many children with complex communication needs).

• Then engage Johnny in assessment
This task may support focus on:

- Inventively manipulating language
- Experimenting with change in meaning based on change in word order
- Focus on left to right orientation
- Using language for imaginary purposes
- Create a novel utterance that is static and may be used to re-tell a story
- Begin creation of a self-authored story book
- Make abstract language more meaningful by drawing and acting out

Innovative use of computer to focus on speech sound production, imitation of speech, tactile cues and sign

Many children are resistant to tasks they know are hard or for which they have been drilled
Sharon Shaham, MS, CCC-SLP

Innovative Uses of Technology to Engage Children in the Assessment Process

Philosophy:
Instead of rewarding a child for participating in assessment, the assessment process should be rewarding

Case 1
School assessment suggested child not ready for static displays
Goals focused on communicating a choice from a field of two
Innovative use of PPT to create a motivating ‘dynamic display’

- **Outcome:**
  - Initially used single icon
  - Would combine two words
  - Navigated the dynamic display when "sabotaged" access to motivating vocabulary
  - Produced verbal speech approximations of motivating vocabulary
  - PPT allowed for home-based experience and evidence-based trial without additional technology purchase

www.childrenshospital.org/acp

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**Case 2**

- **Assessment:**
  - Use of keyboard of small hand-held device
  - Ability to spell target words
  - Verbal production of target words/sounds

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Outcome

✧ Enjoyed being engaged in a ‘project’ (that happened to incorporate the assessment goals)
✧ Innovative use of Power Point, recording features and animated symbols supported engagement for:
  ✧ Spelling target words
  ✧ Speech production
  ✧ Willingness to verbally repeat
  ✧ Use of keyboard on small handheld

Case 3

• Assessment goals:
  ✧ follow two-step directions
  ✧ Demonstrate understanding of first/then
  ✧ create complex sentence using high-tech system.
Outcome:

- Child resistant to tasks
- Child very motivated by a computer character
- Task created to incorporate the character and vocabulary for participation using a high-tech system
Rationale

Research and clinical observations have demonstrated that many individuals with ASD benefit from use of visual supports.

Children with Pervasive Development Disorder - Not Otherwise Specified (PDD-NOS) have been found to interpret visually based information superiorly to information presented auditorily (Althaus, de Sonneville, Minderaa, Hensen & Til, 1996; Mottron, Burack, Stauder & Robaey, 1999; Shah & Frith, 1993; Thaut, 1987).

Children with ASD have been found to have an inherent interest in multimedia (Shane & Albert, 2008).

By providing individuals with ASD with assessment materials as presented within visual, computer-based displays, comprehension of task expectations is likely improved, and individuals are most likely to participate, as the assessment itself has been presented within a more motivating medium.

Prepositional knowledge

Example: Colin
- 6 years old
- Highly motivated by Champ, an engaging and animated character used within Puddingstone Place, a software program introduced to Colin within therapy sessions at this center
- Prepositions have been included on his IEP for several years
- His mother reports minimal success teaching prepositions

Prepositional knowledge

Example: Colin

Colin was presented with a Teaching Language Concepts, an engaging application that teaches comprehension and use of abstract language concepts (e.g., verbs, prepositions) through the use of animated graphics and dynamic videos.

Within TLC, lessons can be easily customized. In the case of C, he was presented with lessons containing highly motivating images (i.e., of himself and Champ), in various locations in relation to a tree or table in photographs.

Video: Using the embedded color-coded visual symbols arranged in a left to right orientation as presented in-screen, Colin combined the elements to create generative sentences demonstrating knowledge of targeted prepositions including: in, in front of, next to and behind.
He looks at picture and then demonstrates prepositional knowledge by creating/describing the picture.

Patient video or photos