



Talking Through Technology: AAC 101

Green River Regional Educational Cooperative

Day #1 – AAC: Just the Facts!!
December 3, 2010

Day #2 – AAC Assessment and Intervention
February 25, 2011

Day #3 – AAC Goal Planning: Addressing Competence
March 11, 2011



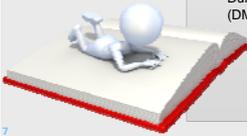
What is AAC?

Definitions

AAC refers to ways (other than speech) that are used to send a message from one person to another (sign language, communication devices, PECS, typing messages) that may be aided or unaided

SGD stands for "speech generating device," one of the AAC options

The phrase "speech generating devices" (SGDs) was coined by the Medicare Durable Medical Equipment Regional Carrier (DMERC) medical directors in 2000.



Who is on the AAC Team?

Teachers & Therapists:
Classroom Teachers, Speech Language Pathologists, Occupational & Physical Therapists, Vision Specialists



AAC Users



Parents and Families



Local Community Members:
School Staff, Employers, Doctors, Community Workers, Church Members, Friends



Who are AAC Users?

Ages, Stages and Diagnoses

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Candidacy- Who's it for anyway? people with...

- Motor speech disorders (cerebral palsy, apraxia.)
 - Dysarthria (weakness)
 - Apraxia (motor coordination problems- affecting oral control)
- Aphonia
 - Loss of the voice resulting from disease, injury to the vocal cords, or various psychological causes
- Autism:
 - global language processing and production deficits paired with sensory integration problems.
- Developmental Disabilities:
 - Overall delayed/disordered language not allowing them to meet their needs across their environments
- Language Learning Disabled Students
 - Moderate-Severe language deficits that requires extensive alternative input/output for functioning
- Receptive/Expressive Discrepancy:
 - Difference for any reason (including above) in student's ability to understand language and express themselves.
- Traumatic brain injury
- Degenerative Disease (ALS, MS)
- Aphasia

Communication Ability Levels

Based on the work of Pat Dowden from the University of Washington.

(http://depts.washington.edu/augc_omm/03_cimodel/comind1_intro.htm)

AAC Users Basically Fall Into the Following Functional Skill Levels:

- Emergent
- Context Dependent
- Independent

Independent Communicator



Understands communication the same as same-age peers

Combines single words, spelling and phrases together to communicate about a variety of subjects as others would at his/her age

Literacy and social skills on par with same-age peers

AAC Myths

Who's it NOT for?



Too Cognitively Impaired?

Accelerated Learning

AAC Myths Revealed

Myth: An individual can be too cognitively impaired to benefit from AAC.

True or False: False

"We can't start working on communication yet. He isn't ready!"

"She doesn't have cause/effect."

"She doesn't pay attention to people. Why would we try AAC with her?"

"He doesn't seem to want to communicate."

From Accelerated Learning available at www.dynavotech.com



cognition development is correlated with communication development, but has not demonstrated to be causative.

Are you limiting opportunities? "We don't know what they can learn but we do know that they will not learn if we do not teach them"

**Communication & Cognition
Develop Hand in Hand- if you limit one, You may be limiting the other!**

"He will play with the device to hear the sounds!"

"He doesn't understand interaction!"

Prerequisites to AAC?

Accelerated Learning Dynavox Mayer-Johnston

AAC Myths Revealed

Myth: It is necessary for AAC users to use low-technology AAC tool or techniques before using a speech generating device.
True or False: False

"She doesn't understand the symbols"

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•Draw attention and convey a message at the same time
•Allows for use of motor memory to locate message- messages don't move around
•Gives a model for speech
•Helps interaction with less familiar partners

Benefits of Voice Output

I want

big wheel	puff	trampoline
bubble blower	sand and water table	sidewalk chalk

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"She won't talk if she has a device to talk for her!"



"AAC will be a crutch"

AAC will halt speech development?

Accelerated Learning Dynaflex Meyer-Johnson

AAC Myths Revealed

Myth: Introduction and use of AAC* will keep an individual from using or developing his or her natural speech.
True or False: False

"We don't want to give up on speech." "He is too young for AAC."

"She will always have to use it!"

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Speech paired with visual symbols helps develop "internal phonology"

Immediate output from the device increases "consistency/quality of speech models"

Miller, Light & Schlosser (2006) Literature Review Results:
The impact of AAC intervention on speech:

- Increases in speech production- 89%
- No change in speech production- 11%
- Decreases in speech production- 0%



Reduced pressure to speak- reduced motor demands

"I can understand him at home...in school...in therapy"

"He can repeat sentences I say and everything he hears on t.v. or in the movies."

"We are going to wait for Speech to improve"

What is functional, independent communication?

Accelerated Learning Dynaflex Meyer-Johnson

AAC Myths Revealed

Myth: If an individual has some (or even a little) speech, AAC is not needed.
True or False: False



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Backdoor Neighbors

For AAC practitioners, back door-ism has always meant thinking outside of the box, relentlessly searching for a solution even when one is elusive and – most of all! – believing that there is always, *a/ways* a path to better communication for this person, just around the corner.”

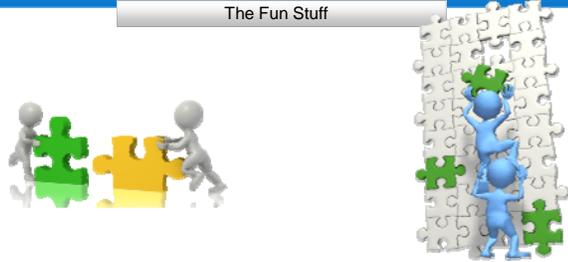
(Mirenda, 2008)



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**Components of AAC:
Equipment & Materials**

The Fun Stuff



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Examples of “Unaided and Light Tech AAC”

Sign Language

Flip N’ Talk Book

Static Display Communication Devices

Single Message Switches

Eye Gaze Boards

PECS: Picture Exchange Communication System



Examples of "High Tech AAC"

Prentke Romich:
Vantage & Springboard Lite

Dynavox V/Vmax, EyeMax,
Xpress, Dynawrite & M3

Proloquo-2-Go

Tobii/ATI C-Series & C-Eye

Zygo Macaw

Components of AAC:

Access Methods:

Direct Selection

- Hands
- Eye Gaze Devices
- Head Pointers
- Head Switch

Switch Scanning

- Single Switch
 - Visual and auditory scanning
- Two Switch Step Scanning
- Switch Positioning
- Linear & Row/Column Scanning

Examples of Access Methods

2 Switch Step Scanning

Eye Gaze Direct Selection

Automatic Auditory Scanning-Head Switch

Examples of Access Methods



Automatic Auditory Scanning



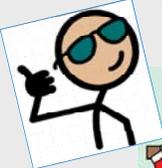
Single Switch Scanning With Dwell Select



Direct Selection with Hands

Components of AAC:

Types of Symbols







Symbolic Hierarchy: Most Tangible to Most Symbolic

- ◆ **Tangible Symbols:** an item that is a normal part of the routine ex: Empty bottle of water = water
- ◆ **Non-identical Objects:** the purple plastic cup = a different cup of juice
- ◆ **Color Photographs**
- ◆ **Colored Real-Life Drawings:** shows 2 dimensional features with color cues, realistic representation
- ◆ **Colored Picture Communication Symbols (PCS, Symbolstix...)**
- ◆ **Background Enhanced Line Drawings:** gives cues about the shape of the object
- ◆ **Black and White Line Drawings:** shows basic features of object
- ◆ **Sign Language:** most easily accessible but difficult because transitory and non-identical to object
- ◆ **written Words**

Symbol Hierarchy

Tangible Symbols 	Non-Identical Objects 	Color Photographs 
Colored Real-Life Drawings 	Colored Picture Symbols 	Background Enhanced Line Drawings 
Black and White Line Drawings 	Sign Language 	Written Words <p style="font-size: 1.5em; font-weight: bold;">Coke</p>

Components of AAC:

Types of Speech Output

Digitized Speech

Is recorded natural speech. Most speech generating devices require the AAC user's team members to record messages via an internal microphone. Some may require an external microphone. Some of the more expensive devices may include professionally recorded voices for female/male and adult/child voices.

Synthesized Speech

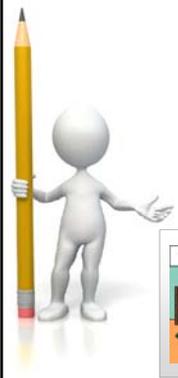
Is computer generated speech which is produced by the computer interpreting the pronunciation of typed messages called "Text to Speech" generation. Synthesized speech is encountered in common public use in GPS devices, public announcement systems, and phone messaging systems.

Neospeech, AT&T Voices, Acapela



Components of AAC:

Types of Visual Displays



Traditional Grid Display



Visual Scene Display



Components of AAC:

Types of Visual Displays

Grid Layout

Traditional grid displays have a grid of buttons each containing a message. Buttons may have a single word to be combined with other words; single letters to be combined into words or, complete messages in one activation. Pages may have 1-160 buttons per page. All buttons may be showing at once or some buttons may be "hidden" to simplify learning.

Advantages: Motor memory can assist user in locating vocabulary easily. Each button is visually clear and separate from other buttons.

Visual Scene Displays

A scene representing the environment in which the user is communicating. Can be a photo of the actual place or a symbol drawing. Touching areas of the scene typically either speak a message or open a popup grid of messages appropriate to that area of the scene.



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