Tools for AAC

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Setting the Stage

Consideration

Consideration

The IEP team shall…….

- Consider whether the child requires assistive technology devices and services….. IDEA '97 300.346 (a)(2)(v)
- Consideration should be given for **every** student with a disability who is eligible for an IEP….. Bulletin 1508

When should this occur?

- During the initial and review IEP
- Any other time requested by team/parents

It would be of maximum benefit if the needs are determined during the course of the Initial Evaluation and an AT assessment is conducted in accordance with evaluation procedures, but ultimately it is the IEP team that must identify the student's need for AT

(p. 126, IEP Handbook-Bulletin 1530)

Augmentative/ Alternative Communication

AAC

- is a component of Assistive Technology
- is any mode of communication in addition to or other than verbal speech

AAC

- Augmentative Communication
  Used by those who have some speech but are either unintelligible or have limited abilities to use speech.
- Alternate Communication
  Used when a person has no speech and must rely on another method to make all their ideas, wants, or needs known.

Speech vs. Communication

Speech

- is just one modality of communication
- is the most natural, efficient and culturally acceptable form of communication
- is typically the long-term goal
- is not always achievable

Communication

Is the primary goal and serves the following functions:

- to indirectly control the environment, for example to obtain or reject something.
- to regulate social interactions, for example to express an emotion or to interact with a friend.
- to receive and convey information and ideas.

Purpose of AAC

- to increase/improve a child's ability to achieve basic **communication** functions in the environments and activities in which the child participates or is expected to participate

(Light, 1989; Reichle, 1997)

Prerequisites?

- There are no known cognitive or other prerequisites that are necessary for a child to use AAC (Kangas & Lloyd, 1988)
- Even infants are known to engage in purposeful, communicative behavior well before the development of language. These early exchanges are very important in that they form the basis for later formal, symbolic communication (Reichle, York, & Sigafoos, 1991)

Reference: http://aac.unl.edu:16080/yaack

Cognitive Considerations

Assess

- **intent to communicate**
- **cause-effect knowledge**
- **understanding of means-end**
- **level of symbol recognition**

Assess: Intent

Intentional communication

- occurs when a child behaves with the aim of influencing another person
- covers a wide range of types of communication from non-symbolic, idiosyncratic behavior all the way to conventional, symbolic communication such as speech, sign language or a voice output communication aid (VOCA)

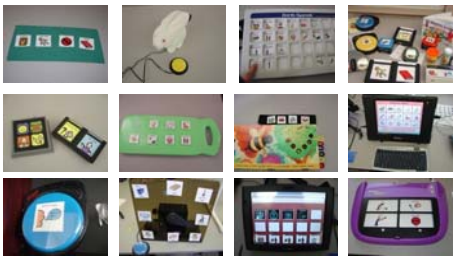
Assess Knowledge of Causality

- causality is the understanding of cause and effect relationships
- child recognizes self as agent of action and begins to act intentionally
- examples: pulling a string to set mobile in motion, pressing a switch to make a noise, vocalizing to get mom's attention

Assess: Means-Ends

- Means-end understanding is very similar to causality
- is the realization that one action results in the occurrence of something else
- Examples: climbing on a chair to reach a cookie on the counter, pulling a switch to activate a toy, taking adult by the hand and leading him/her to refrigerator

AAC Tools



The AT Continuum

Low-tech	Mid-tech	High-tech
Pencil grips	Word Processor	Adapted Computer
Manual Communication Boards	Simple voice output communication device	Text-to-speech
Magnifiers	Talking electronic dictionary	Voice Recognition software
Picture schedule	Tape recorder	Dynamic-display communication device



Gathering Information: SETT Framework

- A complex task of gathering information can be simplified using the SETT framework (Zabala, 1994)
- SETT stands for:

  Student
  Environment
  Task
  Tools

Cause/Effect

- 2 Levels

Press/Hold

Press/Release

Let's talk about…

Switches

What is a switch?

- Is a means to an end
- Is a mechanical device that closes an electrical circuit to turn something on or off

What does a switch look like?

Shape

Color

SiZe

Which Switch?

- Amount of pressure/force
- Feedback
- Amount of travel
- Amount of play
- Appearance

- Profile
- Durability
- Moisture resistant
- Weight
- Cost
- Safety

Can be used to operate:

- Toys
- Computers
- Environmental control units
- Mobility aides
- Communication devices

Questions to ask:

- What part of the body has the best control?
- What is the range of motion?
- How much force is consistently exerted?
- Does the person have good targeting skills?
- Does the person have perceptual problems?
- Where will the person be when using the switch?

Types of Switches:

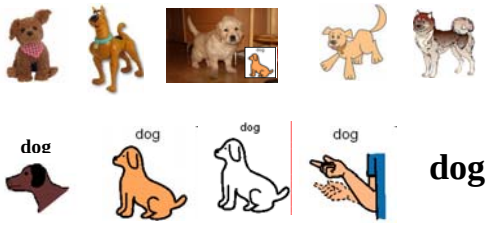
- Touch activated
- Touch and bend
- Touch without pressure
- Muscle contractions
- Air pressure
- Infrared beam
- Orientation in space
- Change in proximity
- Sound

Visual Representation System

- Real object
- Miniature objects
- True object based icons (T.O.B.I's)
- Photographs
- Real drawings
- Line drawings
- Written word

Visual Representation System

Selection of visual representation(s) is based upon the students' individual needs (cognitive, language, sensory and physical)



Begin Making Choices

Objects

Objects & Pictures

Pictures & Symbols

4 Types of Devices

- Static

- Dynamic

- Icon Sequencing

- Text to Speech

Static Display Devices

- Fixed system set
- Can have levels
- Limit number of language due to size and number of locations
- Includes scanning devices

Static Display Devices

- Teaching sequencing and adding locations

Static / Dynamic Display Devices Visual Scenes

- Great for beginning communicators and individuals with significant cognitive and/or linguistic limitations
- High level of contextual support via a shared context
- Utilizes “hot spots”
- Used on low-tech or high-tech devices

Dynamic Display Devices

- Changing set of symbols
- Amount of language is large
- Efficient organization allows single selection for phrases, etc.

Icon Sequencing

- Sequences of a number of multi-meaning icons to form words, phrases, and sentences.
- Known as semantic compaction.
- Sequencing increases the number of possible meanings with the fewest “hits” on a device.

Text to Speech

- Designed for literate users
- Unlimited vocabulary
- Abbreviated expansion
- Word prediction

Types of Access

- Direct selection

- Indirect selection

Direct Selection

- Selection method of choice
- Most efficient, quickest method

Keyboards

Mouse/Trackball

Touchwindow

Indirect Selection

- Significant physical disabilities
- Different types:
  - Single switch – cause/effect
  - Single switch – multiple functions
  - Automatic scanning
  - Step scanning
  - Inverse scanning
  - Morse code

Single Switch (Cause/Effect)

- Direct activation to get started
- Simple means-end
- Not time dependant
- Developmentally simplest form
- Goal – use switch with clear intent

1 activation = 1 immediate response

Single Switch (Multiple Functions)

- Use a switch with clear intent
- Teaching turn taking
- Teaching timing
- Teaching social and pragmatic skills

Automatic Scanning

- Simplest and most common
- Can press the switch to start the scan
- User waits until cursor gets to the location
- Timing factor – SLOWER
- Increases the cognitive, visual & auditory demands
- But, requires very little motor control / movement

Step Scanning

- Manual method
- One switch advances scan & other makes selection
- Eliminates timing factor
- User has active control
- Decreased concentration
- Motor demand increases - fatigue

Inverse Scanning

- Opposite of automatic scanning
- User holds down switch to advance and releases switch to make a selection
- Timing factor
- Reduces motor fatigue

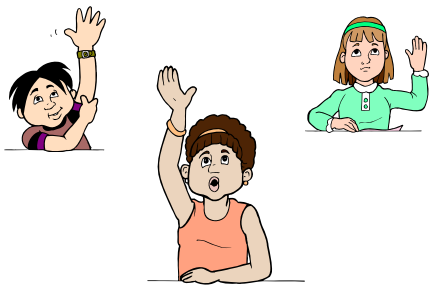
Morse Code

- Use one or two switches (dot / dash)
- Selection set is not displayed
- Eliminates timing factor
- More cognitive skill (memory/sequencing)
- Learned motor pattern

Things to Remember

- AAC system should be multi-modal
- Teach during functional activities
- Model use of system
- Set up environment for requesting and choice making
- Allow time for student to respond
- Provided many opportunities to use system

Questions & Comments



Resource List

- Georgia Project for AT (www.gpat.org)
- Low to Medium AAC Devices - Maher Banajee, Edna Stepteau, Tiffany Hull and Brenda Woolie
- Texas Assistive Technology Network (www.texasat.net)
- Wisconsin AT Initiative (www.wati.org)