Augmentative and Alternative Communication Handbook

What is Augmentative and Alternative Communication?

Almost everyone uses augmentative communication in the form of facial expressions and gestures in addition to speech. Individuals with severe communication difficulties, however, may need to rely on augmentative and alternative communication (AAC) to meet their communication needs.

Augmentative and Alternative Communication (AAC) is an area of assistive technology that "attempts to compensate (either temporarily or permanently) for the impairment and disability patterns of individuals with severe expressive communication disorders (i.e. the severely speech-language and writing impaired)" (American Speech-Language-Hearing Association, 1989). It is an inclusive term for any system that facilitates communication that can include strategies, techniques, and/or devices that support an individual's expressive communication.

Who uses Augmentative Alternative Communication?

Augmentative and Alternative Communication can be used by individuals who are nonverbal, have poor speech intelligibility and/or limited verbal expression. Individuals who are unable to use verbal speech for all of their communication needs may require augmentative and alternative communication. Some deaf and/or hearing-impaired individuals learn sign language as a form of alternative communication. There are a variety of congenital or acquired impairments that can cause individuals to be unable to speak or write without adaptive assistance. The most common congenital causes of such severe communication disorders include autism, cerebral palsy, mental retardation, and developmental apraxia of speech. Acquired impairments that most often result in the need for AAC assistance include amytrophic lateral sclerosis, multiple sclerosis, traumatic brain injury, stroke and spinal cord injury.

Examples of AAC Systems for a student who experiences difficulty with oral communication:

Instructional strategies for teaching AAC users	**Communication Techniques** and **Selection Techniques to access AAC devices	**Unaided Communication (No Tech)** – no external aids or devices	**Aided Communication (Low-High Tech)** – aids/devices with symbols (objects, photograph, picture, text, and/or spoken word)	
			Non-voice output aids or devices	Voice Output Communication Aid (VOCA) or Speech generating device (SGD)
• Structure the environment to support communication and foster interaction • Adapt activities to solicit student participation • Provide meaningful opportunities to communicate • Provide student with choices • Provide open ended questions • Pace the interaction; wait and give the student time to communicate • Prompting only if required • Provide models for student's expressive mode of communication and the appropriate use of AAC • ALS – Aided Language Stimulation • PECS - Picture Exchange Communication System • Partner Assisted Scanning • Role Playing • Comic strip conversation • Incidental teaching strategies –teach AAC in the natural environment	• Natural gestures (e.g. eye gazing, pointing) • Signing • Encoding (e.g. morse code) **Direct selection: - eye gaze - light or optical pointer - head pointer - manual point (e.g. finger, hand, etc) - switch-activated - Electronic head pointing with switch or dwell selection **Indirect selection: - Linear/step scanning - Auto Scanning - Auto Row Column Scanning - Row Group Column Scanning - Directed Scanning - Auditory Scanning	• Gestural communication: - facial expression, - eye gaze - body postures - hand gestures • Sign Language • Speech: - inflectional vocalizations - isolated words or approximations - multiple words (phrases) - complex speech (sentences)	• Eye gaze board/frame • Object communication board • Picture communication cards, board or book • Communication cards, board or book with text or picture/text • Clock communicator or rotary scanner • Social script cards • Paper and pencil or pen • Dry erase board and marker • Alphabet board • Portable word processor	• Voice amplification system • Simple voice output (single message) • Sequencers (multiple sequential messages) • Randomizers (multiple random messages) • Simple voice output device with levels • Multiple location voice output device • Voice output device with icon sequencing and/or icon prediction • Voice output device with dynamic display • Voice output device with interactive "visual scenes" • Voice output device with word-based vocabulary • Device with speech synthesis for typing with or without word prediction • Software: text to speech

The Goal of Augmentative and Alternative Communication (AAC):

Communication involves the interaction or exchange of one's wants, feelings, thoughts and/or ideas among two or more people by such modes as speech, writing, facial expression, gesture/sign or touch. A person who is nonverbal or has difficulty using verbal speech for all communication purposes may need to use augmentative and alternative communication.

It is important for AAC users to have a means to express wants and needs, to exchange information, develop social closeness with others and to engage in social etiquette routines. The goal of AAC is to use the most effective communication possible that may require a multimodal approach in order to be able to communicate for different purposes in a variety of contexts. The individual's full communication capabilities could include "any residual speech or vocalizations, gestures, signs and aided communication" (ASHA, 1991)

Implementing AAC into the classroom:

All of the IEP team members should be included in decision-making process for the type of AAC system used and how to integrate AAC into the curriculum. The process begins with the IEP team reviewing the student's IEP present levels of educational performance describing the student's current communication skills and needs. Communication goals and objectives are worked on by all the IEP team members and not just by the speech language pathologist. There should be many opportunities throughout the school day to work on implementing AAC into the classroom. In order to help with generalization of the student's communication skills, the student should interact with many communication partners in different environments.

Augmentative and alternative communication (AAC) users may use a range of no technology (gestures, signs), low technology (communication board, wallet), and/or high technology (voice output communication aids) methods to communicate during different activities and with a variety of communication partners.
One AAC system may not be adequate to express all the student's communication needs so multiple AAC systems may be used. There may be instances when using one low-tech or high tech AAC system will not be possible in the classroom setting or during a particular activity. The IEP team can look at the student's daily schedule and determine which activities are good opportunities to work on a specific communication goal(s). A visual mapping tool called the "Augmentative and Alternative Communication Matrix" can help guide the IEP team in planning when the communication task(s) and goals will be worked on during which activities. This mapping tool simply consists of a sheet of paper with various boxes in which the IEP team identifies a student's daily classroom activities (i.e. arrival, morning circle, reading, recess, math, lunchtime, etc.). In each box the desired activity is listed along with the identified communication strategy and/or device that will be provided to the student during the class activity. The AAC Matrix can then be used to help measure the student's progress of an IEP goal involving an AAC system being used during different activities. A blank form and example of the Augmentative and Alternative Communication Matrix are available for the IEP team to use or another data keeping form can be used. The goal of using a data keeping form like the Communication Matrix is to identify what type of AAC system is easier for the student to use and communicate with during particular class activities. In order for the student to communicate in a variety of contexts it is important for the IEP team to determine what vocabulary is needed for different class activities. The vocabulary should be based on what the student wants or needs to say. Vocabulary selection is an on-going process since a person's vocabulary grows and changes over time.

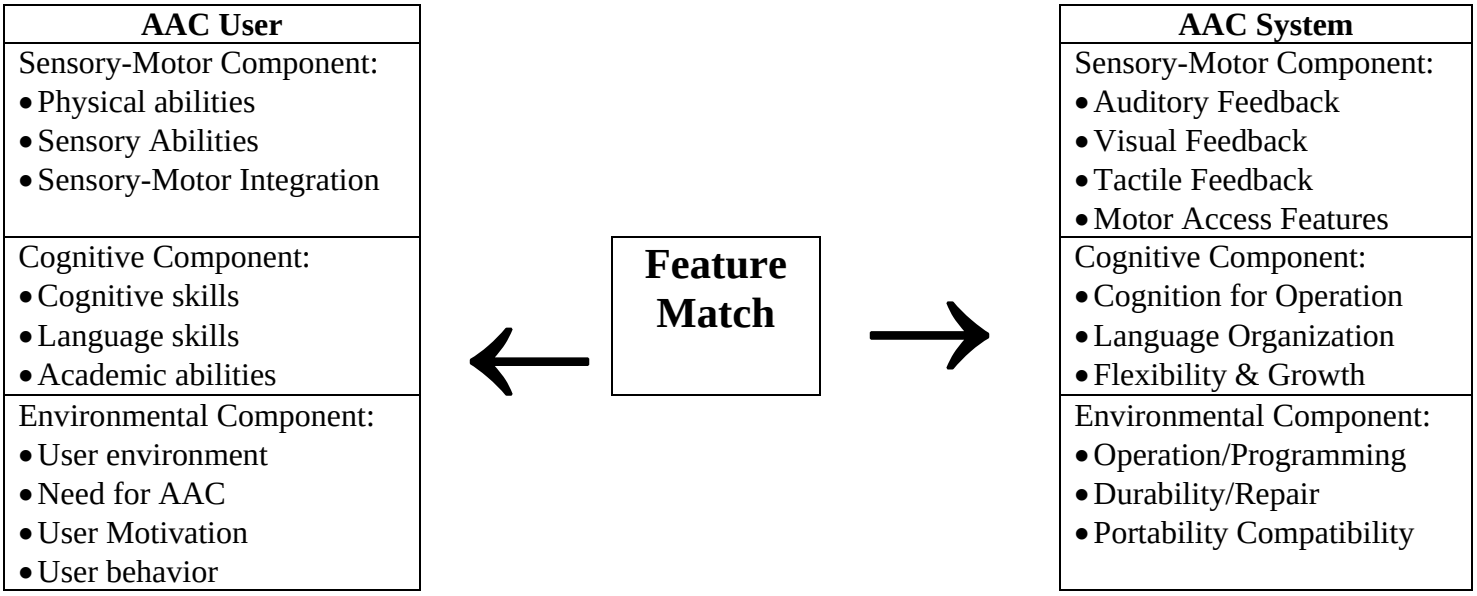
Vocabulary Selection Strategies:

The student needs to be able to communicate with others and participate in his class activities. Vocabulary is an important tool that makes participation possible. The type of vocabulary that is chosen to teach the student or include on his AAC system depends on if the student is an emerging, context-dependent or independent communicator. According to the Communicative Independence Model, the goal and vocabulary selection strategies are different.

	Types of Communicators ----------→		
	Emerging Communicator	**Context-Dependent Communicator**	**Independent Communicator**
Description:	-Beginning to learn symbolic language -Unreliable symbolic communication	-Reliable symbolic communication -Limited vocabulary -Limited partners	-Reliable symbolic communication -All topics -All partners
Primary Communication Goals	Identify the first symbolic communication	Expand vocabulary and partners and contexts	Individual's goals and desires for improved communication
Vocabulary Selection Strategies:	1. Likes and Dislikes Checklist 2. Observation of AAC User in Communicative Contexts 3. Communication Breakdown Diary 4. Analysis of Inappropriate Behaviors	1. Likes and Dislikes Checklist 2. Observation of AAC User in Communicative Contexts 3. Communication Breakdown Diary 4. Analysis of Inappropriate Behaviors 5. Review Existing Vocabulary 6. Environmental Inventory 7. Participation Inventory 8. Topic Inventory 9. Topic-Specific Conversation with Partner 10. Observation of Speaking Peers/Friends/Family Members 11. Observation/transcription of Speaking Partner and AAC User 12. Role Playing and Dialoguing 13. Vocabulary for Language Learning 14. Novel Vocabulary, Gathered Through Hints 15. Large Commercial Vocabularies 16. Small Commercial Vocabularies 17. Public Domain Vocabulary (from the Internet) 18. Words and Phrases from other AAC Users 19. Words and Phrases from Speakers 20. Control Phrases from other AAC Users 21. Small Talk Phrases from other AAC Users	1. Programming Predictable Messages for Quick Retrieval 2. Using Prediction for Rate Enhancement
Go to http://depts.washington.edu/augcomm/index.htm to learn more about the above vocabulary strategies.			

Feature-Matching

There are a lot of different types of AAC systems. **Feature-matching** is a process that involves matching the skills of the student with the features of a given AAC system. There are advantages and disadvantages to different AAC systems. For instance, one advantage of sign language is its portability and the vocabulary size is potentially unlimited with a manual signing system. A student with poor fine motor skills and weak memory, however, may have difficulty with learning and using this type of AAC system. In addition, if the student relies solely on sign language his communication partners are limited to those people who are familiar with sign language. As a result of a student's disability, one AAC system may better match his needs, abilities and skills. The IEP team can consider the following features of the AAC user listed below and discuss what possible AAC system might be appropriate.



Symbols Selection

The type of symbols used in an aided communication system may depend on the student's cognitive level and/or visual acuity. For instance, a young child may be at the concrete level of thinking and need to use actual objects (e.g. cup for "drinking"). The aided symbol hierarchy (Mirenda & Locke, 1989) that goes from most iconic (representational) to least is objects, color photographs, black and white photographs, miniature objects, black and white drawings, Blissymbols and traditional orthography (written words).

Vocabulary Organization:

The student's vocabulary can be organized in various ways on his aided AAC system. Here are some possible examples:

- **Topic Specific** – vocabulary for one topic or situation are grouped together on one overlay, board or page on a communication device
- **Communication or Pragmatic Function** – conversational vocabulary may be grouped together. Requests, questions or clarification strategies may be grouped together
- **Grammar based** – parts of speech arranged in specific locations. For instance, nouns and pronouns are located on the left side of the display followed by verbs, adjective, and direct objects on the right side. This format allows the AAC user to sequence a syntactically correct sentence structure.
- **Ease of Physical Access** – the picture symbols/words that are used most frequently are placed in areas easier for the AAC user to reach motorically. It may also be arranged to accommodate students with visual field difficulties.

Examples of Feature-Matching an AAC User with Lite Tech AAC System*

Type of AAC System	Description:	Possible Client Characteristics	Ideas for using this type of AAC system
Non-voice AAC system	-Non-talking communication displays, devices and materials that may accommodate text, symbols, objects or textured symbols	-Limited symbolic functioning to complex literacy skills -Need to understand communicative intent -Need for concrete representation -Visual issues comprising use of symbols or dynamic display -Reject voice output -Need for backup system -Need to augment other AAC device -Need exposure to wide variety of vocabulary	-Specialty boards for specific situations, especially where other device may interfere with the event or activity (e.g. library) -Serve as visual structure and sequence for completing tasks using individually made schedule boards -Provide vocabulary rarely needed by user (e.g. messages needed for a hospital stay)
Single message voice output device	-Simple voice output communication device that records and stores a singe message. -Easy to quickly record and change messages to use in many activities.	-Motivated by voice output -Emerging communicator -Single message meets situational needs -Needs for portability -Object or symbolic level -Indicates preferences/makes choices -Motor skills ranging from limited to fine -Desires to participate in interactive situations	-Useful for a number of communication activities such as gaining attention, give social greeting or participating in activities -Make a comment -Say a repetitive line in a book -Have a speaking part in a skit
Sequencers	-Simple voice output device that records and stores a series of messages in sequential order -One contact surface for accessing the messages in sequential order	-Motivated by voice output -Emerging communicator -Limited messages meet situational needs -Need for portability -Object or symbolic level -Motor skills ranging from limited to fine -Desire to participate in interactive situations	-These systems permit participation in scripted communication interactions, such as reading stories, taking class attendance or singing songs, following recipes, etc.
Progressive Communicators	-Static display voice output devices that can be configured to have 1, 2, 4, and more grid formats with matching keyguards (Message overlay are changed manually	-Motivated by voice output -Need for growing number of messages -Symbolic functioning -Spontaneous interactive communicator -Moderate to extensive vocabulary -Motor skills from limited to fine -Ability to sequence symbols →message	-Comprehensive communication device that allows for more participation -Instructional device to support learning more vocabulary or messages -Training system for learning to sequence words into phrases or sentences -Ask and answer questions

* The above information was obtained from Elizabeth Rush and Mary Joan McClure's article "Lite tech should always be an option in AAC selection"(Closing the Gap-Solutions, June/July 2007)

Augmentative and Alternative Communication Matrix

Student: _____ Date: _____

DIRECTIONS: Take data in order to establish baseline, measure progress and/or to assess the student's preferred AAC system to communicate during different activities throughout the school day or different environments. Observe how the student interacts with different communication partners, communication motivators and/or barriers.
Activities (Top row – write down the different activities that occur throughout the school day that are communication opportunities for the above IEP goal/objective or specific communication task)
Communication Mode (Left column – write down the different communication modes that the student does (e.g. signs, verbalizations, type of AAC device).
Communication Responses (Inside the matrix– The recorder can take data using tally marks, write down student's vocabulary, narrative description and/or use the following scoring system to indicate student's successful utilization of the AAC system: (P = physical assist, C = cueing, M = modeling, I = Independently)

IEP goals/objectives (write the IEP goal/objective or specific communication task that is expected of the student during different school activities or environmental contexts):							
Activities:							
Communication Mode:							
Name of Recorder:							

Comments:

Augmentative and Alternative Communication Matrix

Student: Ima Kolohe Date: 9/22/08

DIRECTIONS: Take data in order to establish baseline, measure progress and/or to assess the student's preferred AAC system to communicate during different activities throughout the school day or different environments. Observe how the student interacts with different communication partners, communication motivators and/or barriers.
Activities (Top row – write down the different activities that occur throughout the school day that are communication opportunities for the above IEP goal/objective or specific communication task)
Communication Mode (Left column – write down the different communication modes that the student does (e.g. signs, verbalizations, type of AAC device).
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IEP goals/objectives (write the IEP goal/objective or specific communication task that is expected of the student during different school activities or environmental contexts):
The student will use verbal approximation or an augmentative alternative communication system (i.e. signs, picture communication) to independently indicate his wants and needs in 4 out of 5 opportunities for three recording periods.

Activities:	Arrival – greetings, free play	Morning Circle – greetings, songs, calendar, book	Centers – choose puzzles, blocks, books, cars, play house, etc.	Recess or outdoor play – ball, sand or water play	Work 1:1 with student on goal in class w/teacher, aide or therapist	Snack or Lunch	Community Based Activity (i.e. field trip)
Communication Mode: Verbalizations				"bah" for "ball"	"bah" for "ball" "buh" for "bubble"		
Gestures or signs	Waves "hi" following model–I	"All done" – M				"please" – I "more" – M	
Picture exchange system			Puzzle – I Cars – I	Water – C	Ball – I Bubble – I Computer – I		
*Voice output device with prerecorded message & picture icon		"Good morning" "Today is ___" "My turn" visual cueing needed					"I need to go to the bathroom" visual cueing
Name of Recorder:	Ms. Teacher	Mr. Aide	Ms. Teacher	Mr. Aide	Ms Speech Therapist	Mr. Aide	Mr. Aide

Comments: The classroom has several visual supports such as a daily visual schedule, token board, and a first/then card. Student has demonstrated success with using the picture exchange system and uses his communication book to express his wants. He is primarily nonverbal. Student needs a lot of verbal prompting to produce speech sounds and verbal approximation of certain words (e.g. "mama, dada"). *His progress, however, has been slow so a picture/voice output device will be introduced and tried. A voice output device may provide an additional verbal model for him and allow him to participate more in class activities.

Augmentative and Alternative Communication Matrix

Student: Ima Kolohe Date: 9/22/08

DIRECTIONS: Take data in order to establish baseline, measure progress and/or to assess the student's preferred AAC system to communicate during different activities throughout the school day or different environments. Observe how the student interacts with different communication partners, communication motivators and/or barriers.
Activities (Top row – write down the different activities that occur throughout the school day that are communication opportunities for the above IEP goal/objective or specific communication task)
Communication Mode (Left column – write down the different communication modes that the student does (e.g. signs, verbalizations, type of AAC device).
Communication Responses (Inside the matrix– The recorder can take data using tally marks, write down student's vocabulary, narrative description and/or use the following scoring system to indicate student's successful utilization of the AAC system: (P = physical assist, C = cueing, M = modeling, I = Independently)

IEP goals/objectives (write the IEP goal/objective or specific communication task that is expected of the student during different school activities or environmental contexts):
The student will use verbal approximations or an augmentative alternative communication system (i.e. picture/text communication book) to independently ask and/or answer questions appropriately during structured activities in 4 out of 5 opportunities for three recording periods.

Activities:	Attendance and Calendar	Language Arts	Writing	Math	Speech therapy or social conversation	Community Based Activity	
Communication Mode: Verbalizations	Raises hand and responds with "Here" when name is called – I Answers who is absent – still needs verbal modeling	"I need help" – I "I don't know" – I Following verbal/visual model he will repeat target questions and answers.	"I need help" – I "All done" – I Following verbal/ visual model he will repeat target questions and answers.	"I need help" – I "I don't know" – I Following verbal/visual model he will repeat target questions and answers.	"I need help" – I "I don't know" – I Given verbal/visual model he will repeat target questions & answers. Use social scripts to help him initiate & maintain conversation.	"I need help" – I "I don't know" – I Following verbal/ visual model he will repeat target questions and answers.	
Picture/text communication sheet or book	Calendar page:: Student points to day of week, month, # date in response to questions – visual cueing sometimes needed	Writing with symbols – short summary paragraph of story: Points to picture/text when asked simple "what, who, where" questions – PA, C, M needed	Student points to communication book to ask to use computer or portable word processor to type writing assignment – I	Student points to numbers on his communication sheet to answer math problem.	Points to questions &responses in his conversation page of his communication book. He sometimes needs to refer to his social script visual tool.	Points to questions & responses in his conversation & community outing pages of comm book. He needs visual and verbal cueing to use communication book outside of school.	
Voice output device with dynamic display	Names students as attendance or calendar helper. Asks other students "What is today?" or use device to answer date question– needs verbal and visual cueing.	Reading page:: Uses device to verbally ask or answer questions (Can you read it again? I liked it!, etc) – PA, C, M needed	Uses device to ask to use computer or portable word processor to type writing assignment.	Points to numbers on his communication device to answer math problems or to check his work using the calculator function.	Points to questions and responses in his conversation page of his communication device. He sometimes needs to refer to his social script visual tool.	Points to questions and responses in his conversation & community outing pages on his communication device. He needs visual and verbal cueing to use device outside of school.	
Name of Recorder:	Ms. Para	Ms. Teacher	Ms. Para	Ms. Para	Mr. Speech Therapist	Ms. Para	

Comments: The classroom has several visual supports such as a class daily visual schedule, portable student individual class schedule, color coordinated file folder binders for different classes. Student does better reading simple short paragraphs (3–5 sentences) with picture/text support. Student will more readily point to picture/text answer than say a verbal response. He will verbally say target questions or answer following a verbal or visual model, but little initiation.

Hawaii Content and Performance Standards – Examples of some IEP goals that include AAC systems:

Grade Level	Content Standards	Hawaii DOE Content and Performance Standards	Examples of possible IEP goals that include AAC systems:
Preschool	Communication: Speaking and Listening Standard 1: Use language in a variety of ways	Language Arts - Oral Communication: Use strategies within speaking and listening processes to construct and communicate meaning	The student independently will give a picture of a desired object or activity to an adult in order to receive it in __ out of __ opportunities.
Kindergarten	Standard 6: Oral Communication – Conventions and Skills: Apply knowledge of verbal and nonverbal language to communicate effectively in various situations: interpersonal, group, and public for a variety of purposes	Language Arts-Oral Communication: Benchmark LA.K.6.2: Use basic social conventions in greetings, in introductions, and in conversations	When a peer greets the student, the student will wave "hi" or touch a simple voice output device with a greeting message recorded on it at least ___ times a day.
First Grade	Standard 6: Oral Communication – Conventions and Skills: Apply knowledge of verbal and nonverbal language to communicate effectively in various situations: interpersonal, group, and public for a variety of purposes	Language Arts-Oral Communication: Benchmark LA.1.6.1 Express ideas through drama activities (e.g. sharing, role playing, puppetry, mime, choral reading)	Using a preprogrammed voice output communication device the student will produce a sentence to comment on something or read one sentence from a book with ____ % accuracy or ___/____ times.
Seventh Grade	Standard 6: Oral Communication – Conventions and Skills: Apply knowledge of verbal and nonverbal language to communicate effectively in various situations: interpersonal, group, and public for a variety of purposes	Language Arts-Oral Communication: Benchmark LA 7.6.2 Give short prepared oral presentations incorporating information from research to inform and persuade	Using a talking word processor, the student will report on a topic with facts and details, using several sources of information with __% accuracy or ___/____ times.
Twelfth Grade	Standard 4: Writing: Conventions and Skills: Use the writing process and conventions of language and research to construct meaning and communicate effectively for a variety of purposes and audiences using a range of forms	Language Arts-Writing: Benchmark LA 12.5.2 Use a variety of sentence structures and grade-appropriate vocabulary to achieve intended message	Using a portable word processor, the student will type at least three complete sentences about a topic for ____ /_____times.

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