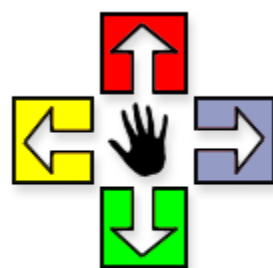


Meeting the Needs of Students with Communication Difficulties



**Special Needs
Technology
Assessment
Resource Support
Team (START)**

Annapolis Valley Regional School Board

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CLOSE-UP

MEETING THE NEEDS OF STUDENTS WITH COMMUNICATION DIFFICULTIES

Margaret is a seven year old girl who is just beginning grade two. Margaret particularly enjoys Math and is quick to do mental computations and hold up her fingers to indicate her answer. She is always eager to volunteer assistance and is the first one to put an arm around the shoulder of another child who is feeling sad or left out. She is always actively involved in playing games with her classmates during free time.

Like any typical seven year old, Margaret has lots of things she wants to say, however she experiences difficulty with oral language. In Kindergarten, Margaret began using an IntroTalker. Messages were recorded into the machine by her teacher and it became, in essence, Margaret's voice. When Margaret pressed a button which held a visual representation of her communication, the machine delivered her message orally. By the end of grade one, Margaret's oral language had developed to the point that she had outgrown the IntroTalker. She now delivers most of her messages orally. When a word is not clear to her listener, Margaret uses an alphabet board to spell the word. She clips the alphabet board to her walker and it accompanies her throughout the school.

Margaret is learning to use a computer, fitted with an Intellikeys keyboard, for written communication. The Intellikeys is larger than a standard keyboard, and works better for Margaret because of her fine motor difficulties. Like the other children in her class, Margaret keeps a daily journal. She types her entry on the computer, it is then printed out and posted in her notebook.

Margaret attends a Brownie Troop once a week and enjoys earning new badges; she is working on her fourth one. Her favourite winter activity is downhill skiing, a sport she is able to engage in by having total body support from an instructor. One of Margaret's goals is to someday ski in the Special Olympics.

MEETING THE NEEDS OF STUDENTS WITH COMMUNICATION DIFFICULTIES

“Individuals with severe communication disorders are those who benefit from Alternative and Augmentative Communication (AAC), those for whom gesture, speech and/or written communication is temporarily or permanently inadequate to meet all of their communication needs. For these individuals, hearing impairment is not the primary cause for the communication impairment. Although some of these individuals may be able to produce a limited amount of speech, it is inadequate to meet their varied communication needs. “(ASHA, 1991, p.10)”

Candidates for AAC may include individuals with cognitive/developmental delay, cerebral palsy, autism, specific language disabilities, multiple disabilities, sensory impairments, developmental apraxia, muscular dystrophy and traumatic brain injury.

CHARACTERISTICS

Students with communication difficulties may demonstrate any number or combination of the following characteristics.

Speech Disorders

- difficulty producing speech and/or problems with voice quality
- dysfluency, stuttering
- voice disorders (hoarseness, breathiness)
- inappropriate pitch and volume
- aphasia (difficulty using words, often due to brain injury)
- difficulty in syntax (word order in a sentence) and articulation

Language Disorders

- difficulty comprehending and/or using written or spoken language
- inability to express ideas
- difficulty following directions
- difficulty using words and meanings in proper context
- poor vocabulary

Numerous technologies available for students experiencing speech/written communication

difficulties are presented below. Emphasis is placed on Augmentative or Alternate Communication systems which supplement or replace communicative skills for students whose speech is temporarily or permanently unable to meet their communication needs.

TECHNOLOGY-RELATED STRATEGIES

Augmentative and Alternative Communication (AAC)

AAC refers to techniques used by students who are non-verbal or have severe speech impairments. For a person with no speech, an AAC system acts as a *replacement* for vocal communication. For an individual who has difficulty with intelligibility of speech an AAC system *supplements or supports* the communication process.

Basic Premises

The team should consider the following premises when developing and implementing an AAC system.

1. Augmentative and Alternative Communication enhances speech and language development.
2. Using multiple systems and communication techniques is more effective than using a single device or technique.
3. Appropriate training and supportive environments promote effective use of AAC's.
4. The teacher continues to speak when communicating with a student using an AAC.
5. A team consisting of any combination of the following members should be involved in **assessment, selection and evaluation**:

speech and language pathologist
occupational therapist
physiotherapist
itinerant teacher for visually impaired
special services teacher
classroom/subject teacher
computer or augmentative communication device specialist

parent
student

6. Some students use aberrant behaviour as a form of communication. The team should not simply dismiss this as inappropriate, but determine if such behaviour is a communication attempt.
7. The AAC system should be a *functional* one. The student's interests and communication needs should determine system content.
8. The AAC system's vocabulary should be easy to supplement and modify as the child's communication environment expands and changes.
9. A communication function should not be replaced with a more abstract form of communication. For example, if a student is able to nod and shake his/her head for yes and no, he/she should not be directed to use a picture symbol for yes and no.
10. During the initial period, the student must have frequent opportunities to use the AAC.
11. A student will experience more success in learning to use a new AAC system if he/she associates using the system with achieving pleasant outcomes.
12. AAC systems should be used in interactive ways. Avoid drill and practice format.
13. The student's AAC system should be integrated into his school, home, community and work environments.
14. Commitment, time and energy is required by the team for successful implementation of AAC's.

Alternate and Augmentative Communication Systems rely on the use of symbols and signals, other than those used in speech, to send messages. Symbols can be divided into those which are aided ie. require some type of external device for production and those that are non-aided ie. which require no external device for production (Lloyd and Fuller, 1986). The external device used with an aided system may be either low-tech or high-tech.

Examples of some unaided systems are:

facial expressions
gestures

Signed English
American Sign Language

Examples of aided systems are:

real objects
miniature objects
photographs
line drawings e.g.

- Picture Communication System (Mayer-Johnson. Co)
- Rebus Symbols
- Blissymbols
- Picsyms

abstract symbol systems

- Morse Code
- Braille

Low Tech Devices

The above mentioned aided symbol systems can be used with the following low-tech devices:

- Communication boards (regular and folding)
- Communication wallets
- Communication binders
- Communication posters
- Clock scans (eg. DialScan by Don Johnson Inc.)
- Eye gaze boards
- Compartmentalized communication boxes

Another low-tech communication device is the **Talking Switch**. It consists of a loop tape (an audio tape with no end, capable of holding a message between 15 & 45 seconds in length) and a switch such as **BIG RED** [Ablenet inc.] or **Buddy Button** [Tash inc.] The student used the switch to turn the message on and off as needed. For example, a non-verbal student may participate in a reading group by using the talking switch to say lines which are repeated throughout a story. In **Just For You** by Mercer Mayer, a non-verbal student could use the switch and loop tape to say the line “just for you”.

High Tech Devices

High Tech systems can be either stand alone voice output communication aids (VOCA's) or computer operated systems used for communication. High-technology devices are generally more expensive than low-tech devices but offer speech output, programming capabilities and can provide the student with a broader range of communication possibilities (though this is not necessarily the case).

They can be of two types. The systems that are for a single use ie. speech output are called **dedicated** systems. An example would be the Alpha Talker [Prentke Romich]. Computer systems which are used for a wide range of functions can also be used, with appropriate software, as AAC's (an example is Speaking Dynamically for Macintosh Computers, [Mayer Johnson]).

An electronic communication device can offer either digitized or synthesized speech. Digitized speech is human speech tape-recorded onto a computer chip. Synthesized speech is robotic and similar to the speech produced by synthesizers used in computers. Table 1 compares two major types of speech output.

TABLE 1

Speech Output: A Comparison Chart	
Synthesized	Digitized
<ul style="list-style-type: none"> • speech produced by synthesizers used in computers 	<ul style="list-style-type: none"> • tape-recorded human speech onto a computer chip
<ul style="list-style-type: none"> • expensive 	<ul style="list-style-type: none"> • less expensive
<ul style="list-style-type: none"> • restricted selection of synthesized voices 	<ul style="list-style-type: none"> • intelligible, realistic speech
<ul style="list-style-type: none"> • some types of synthesized speech is more intelligible than others. (* important to listen to speech before purchasing) • some devices offer both male and female voice (adult and child) 	<ul style="list-style-type: none"> • unlimited voice selection (speech can match age, gender and language of student)
<ul style="list-style-type: none"> • programming more difficult 	<ul style="list-style-type: none"> • easily programmed
<ul style="list-style-type: none"> • more powerful, offers more messages 	<ul style="list-style-type: none"> • less powerful, limited number of messages can be stored

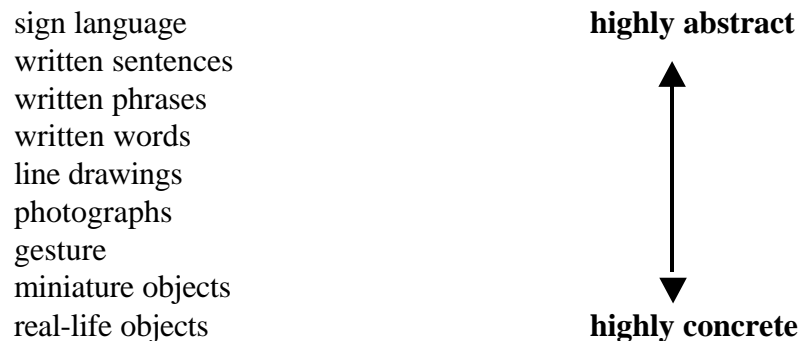
SELECTING COMMUNICATION SYSTEMS

A transdisciplinary team would be involved in the selection of an AAC with the Speech Language Pathologist considered a critical member. Student's strengths and needs in the following areas are considered during the selection.

1. Fine motor skills
2. Sensori-motor integration
3. Cognitive functioning
4. Level of receptive communication
5. Current expressive communication including non-conventional behaviours
6. Motivation level for communication
7. Persons with whom student desires to communicate
8. Student interests

When this information has been gathered the team can begin considering various types of communication systems. Students who are functioning at a low cognitive level generally require communication systems which feature concrete representations of activities (eg. real-life objects or miniature objects). The table provided below lists various types of communication systems in hierarchial order ranging from concrete to abstract. Augmentative communication checklists designed to assist the team in system selection can be found in Appendices B-22 and B-23.

TABLE 2 **Hierarchy of Communication Systems**



RELATED DISABILITY: AUTISM

Most students with autism experience communication difficulties of varying degrees. Some autistic individuals do not speak and others have limited language. These students generally benefit from some type of Augmentative or Alternative Communication (AAC). Refer to section on AAC in this chapter.

CHARACTERISTICS

Students with autism may display any combination of the following characteristics.

- insistence on sameness and routines
- communication difficulty (expressive and receptive)
- peculiar patterns of speech (eg. echoing words or phrases)
- repetitive body movements or behaviours
- perservation on topics and/or activities
- overly reactive to sensory stimuli
- poor eye contact
- difficulty imitating or developing social play
- lack of responsiveness to others
- impaired motor behaviour
- cognitive deficits or normal to superior cognitive skills
- difficulty generalizing learned behaviour to new situations
- behaviour problems
- self-injurious behaviour

GENERAL STRATEGIES FOR STUDENTS WITH AUTISM

- Work in close cooperation with the Speech and Language Pathologist.
- Teach mastery of concepts then have student practice generalizing skills to new settings.
- Teach community living skills.
- Teach student how to interact with others.
- Be as concrete as possible when interacting with student.
- Break complex tasks into smaller steps. Follow task analysis method. (Refer to chapter titled *Meeting Needs of Students with Cognitive Delay*.)
- Prepare student for changes in routine and environment.
- Use short concise sentences when talking to student .
- Use behaviour modification techniques.
- Ensure teachers are consistent in daily interactions and expectations.
- Be aware of the effect of environmental stimuli (visual, auditory, tactile) upon student.
- Use Facilitated Communication (FC) to help student communicate. FC is a technique in which physical communication, and emotional support is provided by a facilitator to an individual. The facilitator gently holds/touches the student's arm at the elbow, wrist or hand to point to symbols (letters, pictures or objects) in an attempt to communicate.
- Inform fellow classmates about autism and give suggestions as to how they can be helpful to the student with autism.