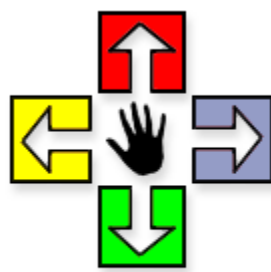


Meeting the Needs of Students with Severe and/or Multiple Disabilities



**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 SEVERE AND/OR MULTIPLE DISABILITIES

Peter is an eight year old boy who is in Grade Three with Challenging Needs teacher support. Peter has Spastic Quadriplegic Cerebral Palsy, uses a wheelchair for mobility and is dependant for all his personal care needs (dressing, eating, toileting, etc.).

Peter smiles in response to familiar people, seems to enjoy playful interactions and on times vocalizes with pleasure. Peter can use pictures and symbols for communication, although accurate pointing is difficult for him. Recently, he began using an electronic communication device which displays pictures/ symbols for recorded messages (**Cheap Talk** [Enabling Devices, Inc.] through which up to eight messages can be recorded). Peter's father records his news from home under the symbol of a house so that Peter can share this with his classmates. Peter can also make choices of snacks and activities through his **Cheap Talk**.

A **Macintosh** computer with a variety of cause and effect and early learning software has been available for Peter's program for over two years. He uses a Jelly Bean switch, a Touch Screen, and is beginning to use the arrow keys on an **Intellikeys** enlarged keyboard (Intellitools, Inc.) to interact with the programs.

There is also a range of non-tech and low-tech adaptive aids to assist in meeting Peter's personal care and learning needs . Examples are adapted eating utensils, a raised toilet seat and a Columbia High Back toilet support (Flaghouse, Inc.), a table top easel that his father made and non-slip matting.

MEETING THE NEEDS OF STUDENTS WITH SEVERE AND/OR MULTIPLE DISABILITIES

CHARACTERISTICS

Students with severe and/or multiple disabilities may exhibit any number or combination of the following characteristics depending on the severity of cognitive delay and/or additional disabilities such as vision and hearing impairments, communication difficulties and physical disabilities affecting mobility, coordination, and/or fine motor skills.

- language delay and/or speech problems
- limited or no verbal communication skills
- lack of basic physical mobility
- limited self-care skills and independent community living skills
- problems with attention, perception, memory and problem solving
- poor retention of skills
- slow rate of learning
- difficulty transferring or generalizing skills learned in one situation to another situation
- self-stimulation
- self-injurious behavior
- ritualistic behaviours
- inability to attend/relate to people
- medical problems (eg. seizures, cerebral palsy, sensory loss, hydrocephalus and scoliosis)

TECHNOLOGY-RELATED STRATEGIES

Educational programming for a student with multiple disabilities will be determined by a transdisciplinary team, and should focus on developing means to allow and encourage the individual to become as active and vital a participant in daily life as possible.

It is critical that all team members, professionals, family and peers are cognizant of the unique educational and psychosocial needs of the student, to avoid planning and interactions based only on the complex physical and medical difficulties that present. The rights and dignity of each individual must be paramount in all programming decisions.

Technology can be incorporated as a tool in programming in the following areas:

Learning:

Programs for students with multiple disabilities often focus on early concept development, such as object permanence and cause and effect. These concepts are integral to the later development of language functions and higher cognitive skills. Switch operated technology allows the student with significant physical limitations to become an active participant in learning activities and thus enhances learning opportunities.

A wide array of switch operated toys, as well as an ever expanding range of computer software is available. Some companies offer software that will foster development of basic concepts (eg. cause and effect, responding to simple commands), using activities at interest levels appropriate for older students. One example is **Teenage Switch Progressions** (R.J. Cooper, Inc.) The activities on the computer screen, activated by a press of a switch, range from popping popcorn to applying makeup. These programs also offer a valuable medium for interaction with non-disabled peers.

Most programs designed for this level of learning incorporate opportunities for development of more advanced skills as well. Many of them begin with simple cause and effect (a switch press causes activity for a pre-set time period), advance to a sustained press being required for the activity to continue, and then incorporate simple commands (eg "press the switch now"), to develop deliberate response to oral commands.

The range of switch options is extensive and the particular switch chosen must suit the individual's particular physical abilities. See Section III for a further discussion of switch selection.

Positioning/ Mobility

Good positioning/ handling of students with multiple disabilities is critical, both to reduce pain and prevent further physical complications, as well as to allow the individual to see, hear, reach and become engaged in persons and materials for optimal participation and learning.

Many students will also require aids for mobility both in general as well as during Physical Education classes. Assistive devices are instrumental in meeting these needs. Discussion of some of the available options is presented in the Section of the handbook on *Meeting the Needs of Students with Physical Disabilities* and, in more detail, in *Programming for Individual Needs: Physical Disabilities* (1996).

Communication

Most students with multiple disabilities have limited verbal communication skills. Adults or peers often make choices for students with multiple disabilities because they cannot speak. There should always be direct instruction to encourage even very physically involved students to make choices independently. Various low and high-technology Alternative and Augmentative Communication systems can be used to supplement or replace verbal communication. The range of options can be from non-tech (eg. eye-pointing to the actual object) to high- tech (eg. switch selection of choices displayed on a computer screen as they are scanned by a screen pointer). Speech Language Pathology as well as Occupational Therapy consultation is advised when decision-making is this area. Refer also to the section of this handbook on *Meeting the Needs of Students with Communication Difficulties*.

Environmental Control

Students with multiple disabilities can use Environmental Control Units to exercise control over the environment. ECU's allow the individual to turn on/off lights, electrical appliances (radio, TV, etc) and battery operated devices (tape recorders, games, and so on). Another similar piece of technology is an Automated Learning Device (ALD) (Ablenet, Inc).

Play/Leisure/Socialization

Technological tools for these areas may include adapted puzzles/games, toys adapted for switch use, computer assisted drawing programs, as well as computer games with specialized

input and/or output devices. A **Switch-Adapted Mouse** (R.J. Cooper, Inc.) offers wonderful opportunities for co-operative play. A non-disabled peer moves the mouse, while the student with a disability "clicks" through a switch.

Sports/Recreation

There is a range of adapted sports equipment that can assist in involving students with multiple disabilities in physical education and outdoor programming. Adapted bowling equipment, balls with sound, various supportive swings, hammocks, adapted tricycles, scooter boards and powered vehicles offer the student the opportunity to experience different positions, orientation and movement experiences that otherwise would not be available.

Daily Living/Personal Care

Technology to assist the individual with multiple disabilities complete daily living tasks may include adapted eating utensils, bathroom aids, adapted clothing and dressing aids and so on. Many times, an individual with a Multiple Disability will always remain dependant , to some degree for personal care and daily living functions.

GENERAL STRATEGIES

- Actively promote attention to and interest in the environment and other people.
- Engage regularly in oral language activity. Never assume that lack of response infers lack of comprehension.
- Monitor the student's response to stimuli. Some children will learn better with minimal verbal input, others may be hyper-sensitive to visual input or be tactile defensive and recoil from touch or certain textures.
- Use hand-over-hand as an instructional tool cautiously. There is some thought that this tool prevents kinaesthetic feedback and thus reduces learning opportunities.
- Always ensure appropriate and comfortable positioning for the student. Provide frequent changes of position and orientation.

- Actively program so that the student is an integral part of the total school environment
- Respect the dignity of choice. Do not always decide for the student , even if waiting for choice takes more time.
- In specific skill teaching, follow the Task Analysis method as outlined in *Meeting the Needs of Students who are Cognitively Delayed*.
- Arrange for teaching to occur in a variety of environments, both school and community.