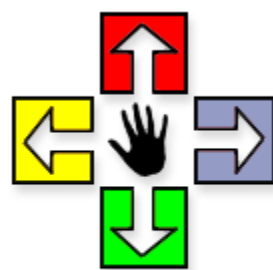


Meeting the Needs of Students with Cognitive Delays



**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 COGNITIVE DELAYS

Jane is a first year high school student who requires an alternate program plan due to her level of cognitive functioning. She enjoys listening to books on tape, going to cooking class and helping out in the school office.

Jane has the physical development of a typical sixteen year old. Through verbal interaction with Jane it becomes apparent that her capability is below that of her peers. Social interaction is also awkward for her. For example during the opening school year assembly Jane had to be prompted to sit in an appropriate place. Confusion was quite apparent as she hesitated to respond. When the message was repeated with hand cues included, she responded immediately.

This semester Jane is working in the office three periods per week. A class peer assists her with stapling for the school by collating papers and placing them in a tray lying directly under an electric stapler. Jane then staples the paper by pressing a switch which is connected to the electric stapler. Jane always looks forward to working with her friend on these days.

MEETING THE NEEDS OF STUDENTS WITH COGNITIVE DELAY

CHARACTERISTICS

- Weak problem-solving ability related to academics.
- Depending on degree of delay students experience mild to severe problems with learning, communication, social, academic, independent living, leisure and work skills
- Problems in adaptive behaviour (the ability to meet/adapt to the demands of one's environments)
- Pass through same phases of cognitive development but at a slower rate
- Attain lower levels of achievement
- Short attention span
- Difficulty with abstract concepts
- Acquisition, transfer and generalization of skills and knowledge is difficult
- Can have low self-esteem due to repeated failure both socially and academically.
- Achievement deficits in reading, comprehension, mathematical reasoning and problem solving
- Often behave inappropriately due to difficulty reading social situations
- Speech and language difficulties
- Tendency to experience difficulty in physical/motor areas ranging from mild to severe depending on degree of delay

TECHNOLOGY-RELATED STRATEGIES

When teaching students to use various technologies, keep in mind individual learning styles, strengths, interests and needs.

- Teach a set of skills for operating and understanding technological devices using the task analysis method, as mentioned in general strategies section.
- Individualize instruction by using self-pacing, record keeping software to develop basic math, reading and language skills.
- Provide opportunities for student creativity and decision-making by using graphic software which allows changes to be made by using “undo” icons.
- Give students with reading and/or motor difficulties access to the computer keyboard by:
 - providing a keyguard (prevents unwanted keystrokes)
 - placing stickers with colours, pictures or larger print on certain target keys (helpful for programs requiring only few keys)
 - altering keyboard features (using Access Utilities-described in Section III)
- Use alternate input devices such as a mouse, trackball, touch screen or a single switch for specific software use.
- Use alternate keyboards when simple keyboard adaptations do not work. For example, use programmable expanded keyboards with overlays displaying pictures, symbols, and/or words customized to meet specific student needs.
 - * Caution: Successfully using the computer depends upon finding and using the appropriate adaptive device (See Section III of Handbook *Computers: Hierarchy of Technology Access*)
- Use software with speech output to improve student’s ability to attend.
- Positioning is important when using computer technology. Student should be comfortably seated with monitor at eye level and input devices at easy reach to decrease fatigue.
- Use audio and videotape with students for instructional and record-keeping purposes.

- Teach students to use calculators for relevant daily living activities (eg. grocery shopping, restaurant)

Low and High - Technology Options

Technological devices used by students with cognitive delays can range from daily low-tech items such as VCRs, calculators, tape recorders or telephones to high-tech computers. Some devices are necessary for developing life skills, independence or communication while others can assist in academic instruction. Technology application should be related to one or more of the student's educational goals.

Low and High Tech Devices for Daily Living

There are numerous technologies which assist student's **daily living, employability, and leisure** skills (Copel, 1991). These are listed in alphabetical order.

answering machines
automatic teller machines
calculators
camcorders
clothes dryers
clothes washers
computer games and graphics software
copy machines
debit cards
dishwashers
environmental controls
fax machines
microwaves
remote controls
small appliances
stereos
tape recorders
telephones
televisions
VCRs
vending machines
voice mail

Low and High Tech Learning Tools

audio tapes
battery/switch operated toys and appliances
calculators
camcorders
cameras
computers (standard and adapted systems)
debit and credit cards
educational software
graphics programs
slide programs
software for enhancing speech and language
videotapes

Low and High-Tech Communication Systems

* Refer to the chapter titled *Meeting Needs of Students with Communication Difficulties* for specific information concerning communication systems.

GENERAL STRATEGIES

- Have a positive attitude! Know the student can learn, but at a slower rate.
- Encourage student assistants, peers, parents and other staff to allow the student to do as much as possible, as independently as possible. Doing too much, too often for a student can create a “passive” individual who becomes highly dependent upon others to meet his/her needs.
- Provide structure, routine and repetition to help the student become comfortable with his/her environment.
- Help a student to master concepts/skills through drill and repetition.
- Provide encouragement when student tries to back away from challenges and invites others to do his/her work.

- For a student with extensive cognitive delay, use the **task analysis method** (breaking down a complex concept/skill into its component parts arranged in a logical teaching sequence).

Task Analysis STEPS

1. State skill/concept to be learned (eg. tell time to 1/2 hour).
2. List the prerequisite skills and all the steps to the skill/task.
3. Order steps in hierarchical order or logical teaching sequence.
4. Find a *baseline*: the level where student is functioning prior to instruction or one step below where a student is experiencing consistent success.
5. Begin teaching; teach steps to student with significant delay in classroom and natural settings as well.
6. Teach each step in a variety of ways until over learning occurs, e.g. student practices to the point where he/she can experience success on a number of occasions, over a period of time.
7. When skills are learned in one situation, provide specific transfer instruction for skills to be applied in other situations.