



Instructional Strategy – Multiple Challenges

Connect to the curriculum

No Child Left Behind Act (NCLB, 2002) requires that all children, including students with significant disabilities receive instruction and progress toward grade level performance. Research has shown that cognitively impaired students can learn and make progress toward grade level material. It is an even greater challenge when students with severe cognitive impairments are deaf or hard of hearing.

Determining how this group of students “fit in” with the curriculum and show progress is challenging. The goal is to fit reading, writing, math, science and social studies into the daily schedule for this population of students, who also require support with self- help skills, speech therapy, physical therapy, occupational therapy, as well as listening and language development.

This article will provide information for connecting students with hearing loss and cognitive impairments to academics. It will look at three effective strategies -

1. Modified instruction
2. Systematic instruction
3. Embedded instruction

The rate of learning is slower for this population. Modified instruction is less content with more practice.

Instructional units must be shorter in length while at the same time provide additional practice for targeted skills. In Reading, this means a shorter story with extensive pre-teaching of vocabulary to support comprehension. This is followed by repeated readings of the story with focus on specific skill areas such as sequence of action, change in character’s feelings, or author’s purpose. Comprehension practice should include 3 examples of each type of question instead of one. Additionally, the same story and activity may need to be repeated over several days to develop mastery. In Math, computation skills will require at least twice as many examples and, again, practice over a longer period of time. Research has shown that lower cognitive potential means the student learns by rote memorization and has difficulty recognizing a pattern. For example, $1+1=2$, $1+2=3$, $1+4=5$ can be mastered but there may be difficulty when asked, “So, what is $1+45=?$ ” This difficulty with generalization requires additional practice with rote learning and specific instruction in recognizing patterns. Algebra will be a challenge!

The difficulty with recognizing patterns and generalizing requires systematic instruction. Concepts must be analyzed carefully and broken into sequential learning steps. Each step must be fully mastered before moving on to the next step. In reading, this means following a specific order of instruction for each lesson. Many established programs such as Edmark or Wilson provide a format of incremental learning that develops reading skills. In Math, the general education curriculum may be appropriate with the additional modification of reducing the content of each lesson and adding additional practice. Practice needs to be frequent and over time. There needs to be a constant review of previously presented skills along with new skill instruction. Think one step forward with two steps back.

Embedded instruction has proven to be a successful evidence-based practice for students with significant cognitive disability to show progress with age grade level content. Embedded instruction addresses learning within the context of everyday activities. A cooking lesson can include instruction in measurement and fractions. An art class can include instruction in geometry forms and symmetry.

The emphasis is on choosing key learning goals for the present need and for the future. The benefits of embedding content areas throughout the day include:

- opportunity to build upon prior background knowledge,
- increase communication opportunities,
- better time management,
- generalization of skills,
- the ability to infuse literacy skills into daily routine and plans, and
- increase on task behaviors.

A key component of the common core curriculum is the development of oral and written language skills.

The common core requires instruction in reading, writing, speaking, listening and language that builds over time and is ongoing. Embedded instruction provides opportunities to learn and practice oral and written language skills in meaningful contexts. For students with severe cognitive impairments and hearing loss language development must be ongoing throughout the day to provide the highest opportunity to learn receptive and expressive language skills. Embedding instruction is a meaningful way to ensure language skills are taught, modeled and used across contexts.

A selling point for literacy skill development

Students with significant cognitive disabilities can access the curriculum successfully through the acquisition of literacy skills. Focusing on the development of literacy skills can lead to the development of other skills in the academic areas of math, science, and social studies. Literacy has proven to be a way for students with significant cognitive disabilities to connect to the curriculum. Instruction around literacy should include lessons that are meaningful, build on prior experience, presented in a concrete manner to facilitate participation with grade appropriate lessons, support vocabulary development and be embedded in other lessons throughout the day.

To support active engagement during daily classroom activities and routines students who are deaf or hard of hearing with significant cognitive impairments must have a way to communicate. These students will need multiple opportunities and time to develop communication skills needed to participate and learn content material. Development of the use of print through literacy skill development provides an additional avenue for communication.

Editor's note:

I served a kindergartener in a Developmentally Delayed class who was cognitively disabled and had a moderate hearing loss. With hearing aids, his pure tone response was borderline normal. Receptively, he responded to speech with head turning, cessation of activity, and appropriate engagement in tasks. Expressively, he was nonverbal and engaged in inappropriate behavior when interacting with others, expressing wants and needs, and following directions. It was observed that he seemed to enjoy activities related to print such as engaging with books, letter cards, and labeling of objects in his environment.

I began an intensive printed word/ object and printed word/ activity association specifically related to a visual daily schedule. He readily responded and quickly learned multiple words and generalized them to future events and multiple settings. His behavior improved as he used words to express his thoughts and feelings. Eventually, he was provided with an augmented communication device with buttons representing words. He expressed his thoughts in complete sentences! It was wonderful to see him interact appropriately and become an engaged learner.

ACCOMMODATIONS AND MODIFICATIONS

Planning for education in the least restrictive setting must include consideration of accommodation options. Many students may only need accommodations to how they are taught and tested while other may need more significant modifications to the curriculum.

Modifications may include:

- completion of part of the program or some of the course requirements
- curriculum expectations below level
- alternate curriculum goals
- alternate assessments

Consider the following questions when determining how to modify instruction or use accommodations.

1. Can the student participate in the same learning activity just like most students, or with accommodations? (if no)...
2. Can the student participate in the same activity if she/he has lower-level learning objectives in the same curriculum area (modifications) and accommodations, if needed? (if no)...
3. Can the student participate in the same activity if she/he works on alternate objectives from other curriculum areas embedded (modifications)? (if no)
4. Can the student benefit from working on a different activity in the room related to his/her learning priorities? (if no)...
5. Can the student benefit from working on an out-of-class activity related to his/her learning priorities?

Examples of Accommodations for Students with Significant Disabilities

Methods and Materials for Instruction

- Instructional methods:
 - Real-life settings for instruction
 - Prompting (physical, verbal, visual, supervision/reinforcement)
 - Alternate input modes (e.g., audio, Braille)
 - Personal assistance (e.g., peer buddies, cross-age or peer tutors, teacher, paraprofessionals, volunteers, related services personnel)
- Instructional Materials and Equipment
 - Adapted materials (e.g., textured/tactile materials, raised-line writing paper)
 - Adapted equipment (e.g., use of pencil grips, use of switches to turn on the computer or tape recorder)
 - Computer access (e.g., voice input and output, word prediction software, head pointer, touch screen, sip-and-puff switch, joy stick, alternative keyboard)
 - Use of specialized computer software

Assignments and Assessments

- Assignments
 - Alternate response modes (e.g., drawing, selecting pictures or photos, pointing to picture symbols,

