

SECTION 6: TEACHING STUDENTS WITH COGNITIVE IMPAIRMENTS/MENTAL RETARDATION

Students with cognitive impairment/mental retardation may have mental and/or physical impairments that are likely to continue indefinitely. Examples include, but are not limited to, fetal alcohol syndrome or Down syndrome. According to the U.S. Department of Education, over 10 percent of the students served under IDEA have a cognitive impairment/mental retardation. *(Please note that while current legislation refers to cognitive impairment as mental retardation, discussion continues about changing this terminology.)*

What Is Cognitive Impairment/Mental Retardation?

Three criteria are required for identifying a student as cognitively impaired/mentally retarded under the IDEA definition. The student must meet all three of the following criteria:

1. Significantly below-average intelligence.
2. Significantly below-average adaptive behavior skills—or the skills needed to live, work, and play in the community.
3. A history of below-average intelligence and adaptive behaviors since childhood, defined as before age 18.

School psychologists or family doctors typically conduct both intelligence and adaptive behavior testing to see how a student performs. In some school systems, because of the stigma often attached to the term “mental retardation,” other labels are used, such as cognitive impairment or developmental disability. All of these terms refer to the same thing—significantly below-average cognitive functioning.

Significantly Below-Average Intelligence.

This means the student scored two or more standard deviations below the mean on a standardized intelligence test, such as the Wechsler Intelligence Scale for Children (WISC). The

student’s performance on the test indicates where the student is functioning in terms of age-appropriate intellectual abilities. For example, if a student’s intelligence quotient (IQ) falls between 55 and 75, the student is classified as mildly mentally retarded as long as the student is less than age 18 and meets the listed adaptive behavior criteria.

Quick Facts

Levels of Cognitive Impairment/Mental Retardation

Level	IQ Test Score
Mild	55 to 70 (to 75)
Moderate	40 to 55
Severe	25 to 40
Profound	Below 25

(Since the standard error of measurement for most IQ tests is approximately five points, the top range may go to 75. Average intelligence is considered 100.)

Significantly Below-Average Adaptive Behavior Skills. According to the American Association on Mental Retardation (AAMR), adaptive behavior skills fit into three general areas: conceptual skills, social skills, and practical living skills. These skills are measured with standardized assessments. Significantly below-average adaptive behavior skills are defined as being at least two standard deviations below average in one of the three categories of adaptive behavior or in an overall score of all three. A student must be deficient in at least one item from each category in order to qualify for services under IDEA. See Figure 6-1 on page 54.

Figure 6-1

Adaptive Behavior Skills		
Conceptual Skills	Social Skills	Practical Living Skills
<ul style="list-style-type: none"> • Receptive and expressive language skills. • Reading and writing skills. • Money management skills. • Self-direction. 	<ul style="list-style-type: none"> • Interpersonal skills. • Responsibility. • Self-esteem. • Gullibility (the likelihood of being duped or manipulated by others; avoids victimization). • Following rules and obeying laws. 	<ul style="list-style-type: none"> • Activities of daily living—eating, dressing, bathing, toileting, and mobility. • Instrumental activities of daily living—using the telephone, housekeeping chores, preparing meals, managing money, using transportation services, and handling health issues, such as taking medication. • Occupational/career skills. • Safety skills.

Conditions Must Occur in Childhood.

The student must have had the conditions mentioned above since childhood, which is defined as age 18 or below. The developmental observation period before age 18 differentiates between mental retardation and an adult with impaired performance.

To be defined in IDEA under the category of mental retardation (cognitive impairment), a student must be significantly below-average in intellect, have poor adaptive behavior in three distinct areas, and have been diagnosed prior to age 18 to meet the criteria. Any student who does not meet these standards is not qualified to receive assistance under the IDEA category of mental retardation (cognitive impairment).

Brain Development and Learning Success

The brain plays a major role in learning success. According to Dr. Mel Levine, Professor of pediatrics at the University of North Carolina Medical School, author, and cofounder of a non-profit institute called *All Kinds of Minds*, students with cognitive impairments/mental retardation may have learning strengths or difficulties with any combination of the following areas of neuro-development:

1. Attention.
2. Temporal sequential ordering.

3. Spatial ordering.
4. Memory.
5. Language.
6. Neuromotor functions.
7. Social cognition.
8. Higher order cognition.

The degree of strength or difficulty in any of the eight areas listed is different for each student. How will you accommodate all the different learning strengths, challenges, and styles of your students? In order to enhance their learning experiences, you need to present information to students using as many of the five senses as possible. See Figure 6-2.

Imagine using only one method to teach, such as lecturing. Students receive information in only an auditory manner and do not have the benefit of experiencing the content through other senses. The use of cooking demonstrations in a foods class gives students multiple opportunities to absorb learning—they can see, smell, and taste.

The FACS curriculum provides many opportunities for students with cognitive impairments/mental retardation to learn according to their personal strengths.

Once students with cognitive impairments/mental retardation finish high school, the lessons learned in your class may help them make career choices they never thought possible.

The Brain

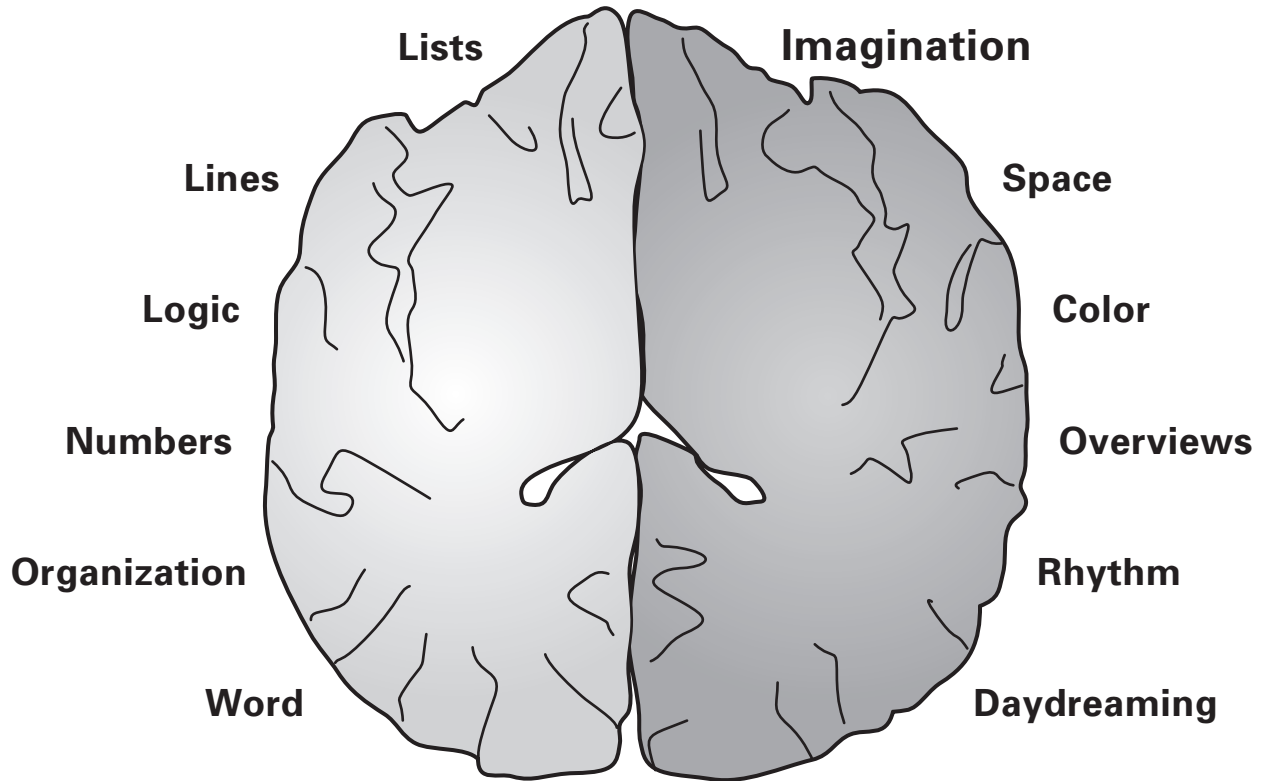


Figure 6-2 The brain is a fantastic organ. It consumes one-fifth of the oxygen you take in. Drinking water, exercising, and breathing all increase the amount of oxygen the body delivers to the brain. Scientists believe the brain has a logical left and creative right side with each half responsible for specific information. The logical left side handles lists, lines, logic, numbers, organization, and words. The creative right side works with imagination, space, color, overviews, rhythm, and daydreaming.

Causes of Cognitive Impairment/ Mental Retardation

Understanding the causes of cognitive impairment/mental retardation is both complex and challenging. The two primary causes of cognitive impairment/mental retardation involve biological or environmental factors. However, often factors from both categories are involved. For about one third of the people with cognitive impairment/mental retardation, the cause is unknown.

- ◆ **Biological** refers to a physiological source and may be a genetic disorder, cranial malformation, or poor prenatal care. The best-known and most prevalent example of a biological cause is Down syndrome, a genetic disorder.
- ◆ **Environmental** refers to a psychological or sociological cause for cognitive impairment/mental retardation and may include personality, psychiatric, developmental, family, living, or lifestyle choices. Drug abuse, alcohol abuse, and learned helplessness are also examples of psychological or sociological environmental causes. According to Ed Zigler, a prominent psychologist, the five personality features commonly observed in cognitive impairment/mental retardation related to learned helplessness include a low expectation of success, fear of failure, need for social reinforcement, outer directedness, and over-dependency on others.

Teaching Strategies and Accommodations for Students with Cognitive Impairments/Mental Retardation

When you challenge students to try new things, work cooperatively, and respect their classmates, you encourage the educational process. Having students jointly develop class rules, posting the rules in a visible location, and referring to the rules as needed helps everyone take ownership of the process.

Including students with cognitive impairment/mental retardation in the classroom will give all your students an opportunity to work with others who bring strengths and challenges to the learning environment. Many adults with cognitive impairments/mental retardation hold productive jobs in supermarkets, restaurants, and other business settings. Life skills, social skills, and peer training are all areas where you can make a difference. How do you accomplish this? First, you need to develop an accepting environment.

Accepting Environment: Students in the inclusive classroom may have many questions about their fellow students. On a continuous basis, indicate you expect team and peer support. Encourage students to become positive role models for others. Remind students that ridicule or laughing will not be tolerated. Help each student experience the joy of accomplishing goals no matter how small.

Routines and Structure: Provide instructional routines and structure to make sure the learning environment is predictable. Many students with special needs have difficulty coping with change. Consistency at the beginning and ending of class can provide a structure that enables your students with special needs to know what to expect.

Teaching in Natural Environments: Teach food preparation skills using kitchen tools, recipes, and terminology before visiting a local restaurant kitchen. Teach shopping skills by visiting a supermarket and conducting comparison-shopping exercises. Make sure that field trips are well planned and barrier-free.

Cooperative Learning: By using this team approach, students with cognitive impairments are grouped with other students in your class.

Cooperative grouping taps into the strengths of all students and encourages support, respect, and appreciation of others.

Graphic Organizers: Presenting information graphically allows students to understand how information relates and ideas are connected. A student's personal filing system for storing class information improves when he or she stores a graphic image along with other important information. Studies show this method is especially powerful for students with cognitive impairments/mental retardation.

Lecture Organizers: Lectures are often difficult for students with attention, processing, hearing, or cognitive impairments/mental retardation. Handing out lecture notes before speaking allows students to highlight important items while listening to the lecture. See the sample of guided notes in *Section 2*. Recording lectures allows a student to pause, replay, and slow down the information as many times as needed. Remember to use written, visual, and verbal approaches in your lectures.

Color: Add color to overheads, handouts, and the classroom to capture the students' attention. Introduce new vocabulary on different color index cards. For example, use red for types of food; blue for cooking terms; and yellow for equipment. Encourage students to use highlighters at each workstation to color-code their materials.

Procedures and Steps: Use verbal and written reminders for giving students instructions, such as cue cards or small or large posters. For example, you might use a poster that combines written instructions and pictures or symbols to present information.

Chaining: Use chaining to teach a task or technique that has multiple steps. For example, you might use chaining when teaching the steps to mixing muffins. To use chaining, go back to the first step and review all of the previous steps each time you introduce a new step in the process.

Overlearning: Overlearning gives students a chance to study and practice after achieving proficiency with course materials before you introduce new material. To ascertain their comprehension, ask students to either explain or demonstrate the concepts.

Demonstrations: Demonstrate new techniques whenever possible, emphasizing each step of the process verbally, physically, and in a handout. Incorporate as many of the senses as possible with your teaching style. Encourage students who have difficulty following the process to check off each step as you complete it. Visual and auditory learners understand information better when they hear and see it rather than only read about it. The combination of reading, hearing, and seeing is a powerful method for reaching students with cognitive impairments/mental retardation.

Breaks: Students with the need to move cannot sit still comfortably for more than 20 minutes. To accommodate this restlessness, build movement into your classroom routine every 15 to 20 minutes. Keep tasks short. Encourage students to stand to gather supplies, move to another area to watch a demonstration, or move into small groups to work on an assignment. The movement allows the students a break in the routine and a chance for their brains to process information and refocus.

Music: During silent reading or group activities, play instrumental music at 60 beats per minute. The music plays softly, becomes background noise, and assists some students with attention difficulties. Classical music and instrumental music are good choices for background noise.

Posters: Display interesting activity posters in your classroom for students to use. When working with a diverse mix of students, always use simple and clear instructions. For example, imagine you asked your students to clean the dishes after they finished cooking a meal. In an inclusive classroom, would everyone understand?

See how one student in Mrs. Ryan's class learned to use the information on the walls to help him be successful. Mrs. Ryan expects each student to participate in the team project, but not always the same job. Grades are determined by personal participation and helping other students to participate in class.

CASE STUDY

Using Posters as Cues

Troy was excited about working in the foods lab, since foods and nutrition class was his favorite subject. Last week, Troy learned how to measure dry ingredients, so this week he volunteered to use the electric mixer to blend the dry ingredients into the creamed butter and eggs.

After mixing the ingredients, Troy volunteered to wash the dishes. Troy grabbed one of the mixing spoons and started to lick dough off the spoon. Mrs. Ryan noticed his behavior and reminded Troy that he should not eat raw dough because of possible food borne illness. She then reminded Troy about the appropriate dish-washing procedures. She pointed to the wall poster, indicating all dishes are washed in hot, soapy water, scrubbed with a dishcloth, rinsed in hot water, and dried thoroughly before being put away. The poster told Troy how to test the water to see if it is too hot or too cold. Troy put on the rubber gloves to protect his hands, followed the instructions, and avoided creating a health problem for himself and others. Remember, written and visual reminders can be helpful!

Following Up Mrs. Ryan used posters to explain health information and does not have to single anyone out. Students with cognitive impairments/mental retardation appreciate positive attention and enjoy being treated like other class members.

Quick Facts

Employment Training & Cognitive Impairment

Many large corporations, especially one-stop shopping stores, have work programs for people with disabilities. As part of their high school education, students with cognitive impairments should be taught work skills that correlate to their functioning levels. Employment training should be a collaborative effort between the school staff and local adult services agencies.

Memory Strategies: To help students increase their abilities to remember information, try the following strategies:

- ◆ Mnemonic exercises use short, common words to help low-functioning students to remember complex ideas. For example, in order to teach foodservice students how to arrange food products for dry or refrigerated storage according to date purchased, use the phrase “first in, first out” or “FIFO.”
- ◆ Using rhymes, catch phrases, acronyms, word associations, and categorizations also encourages memory enhancement and retention for students with cognitive impairments/mental retardation. For example, use the catch phrase, “when in doubt, throw it out” to help students remember what to do if they doubt the safety of food.
- ◆ Using a multi-step process of association helps lower-functioning students utilize and recall information. You might use common buildings and word association to help students remember academic information. For example, most students can picture in their

minds a two-story home and invent or recall vivid details about certain concepts. You might use the home example to help students remember the levels of Maslow’s Hierarchy of Human Needs. See Figure 6-3 for more information.

Service Learning

Service projects help students learn about others in their community and travel beyond the walls of the classroom. *Special Olympics* offers children, students, and adults with cognitive impairments year-round training and competition in 26 Olympic-type sports. Community volunteers serve in a variety of capacities. All volunteers work together to provide the athletes with quality experiences in sports training and competition. Volunteers range from high school students to retired persons.

The following case study shows how Miss Allen includes all students. As students progress through the service learning project in her class, notice how attitudes change and friendships begin.

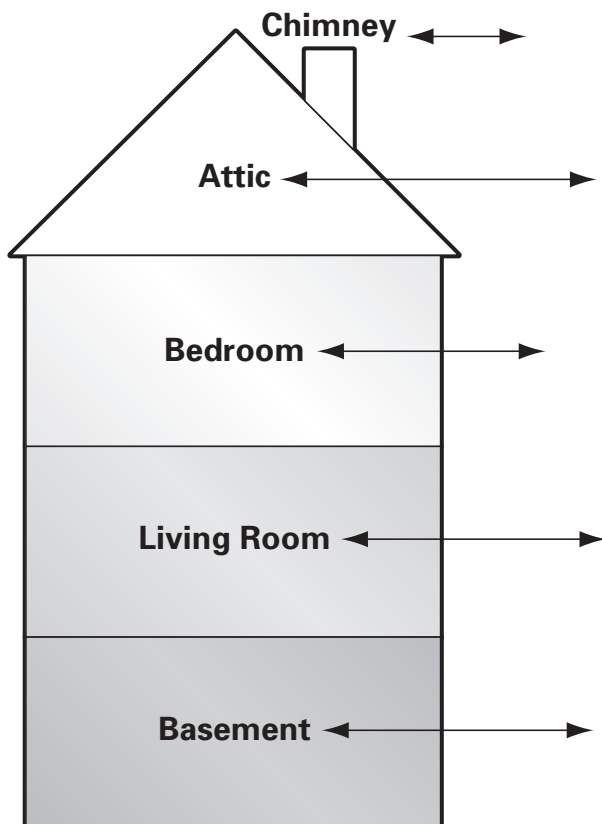


Figure 6-3 Using a multi-step process, you can help your low-functioning students to retain and utilize information. For example, using a familiar building structure, such as a house, and correlating the levels of the house to the levels in Maslow’s Hierarchy of Human Needs brings together something familiar with something new.

CASE STUDY

Special Olympics as a High School Service Project

Miss Allen announced to her class that everyone would be able to participate in the upcoming Special Olympics. Several in the class groaned, but Martin grinned because he thought this meant others would be swimming with him. Martin looked around to see who might be on his team. Two boys in the back were pointing at him with smirks on their faces. Martin smiled and waved back to them; they must be his teammates! Martin didn't understand that they would not be swimming with him—they would be coaching him.

Over the next couple of days, Miss Allen began describing cognitive impairments, discussing potential activities for involvement with the event, and answering many questions. The two boys who had snickered changed their attitudes toward Martin once they knew more about special needs. One

asked to be Martin's head coach and the other his personal cheerleader. Up to that point, the students made fun of Martin because he learned much slower and his speech was unclear.

The day of the swimming event, Martin swam the race as his new coach and personal cheerleader cheered him on. What a thrill to have support and encouragement. Other classmates were timers, and some helped the winners line up to receive medals. After the event, Miss Allen led the class in a discussion about everyone's experiences. Martin's coach and personal cheerleader felt great pride—Martin had won the swim meet!

Following Up In this case study, Miss Allen captured an opportunity to teach everyone how to respect the individual gifts of those with special needs. Students learned acceptance, understanding, compassion, respect, and pride through this service learning project.

Summary

Students with cognitive impairment/mental retardation may have difficulties with attention, temporal sequential ordering, spatial ordering, memory, language, neuromotor functions, social cognition, or higher-order cognition. The degree of difficulty differs with each student. Activities must be geared to students' abilities.

Assessment, observation, and medical professional input can assist with accurately determining a student's strengths and weaknesses.

IDEA provides measurable criteria which must be met in order for a student to be identified with cognitive impairment/mental retardation. Once identified, each school is required to provide all necessary assistance and accommodations so that the student can be successful in the classroom. Check with a special educator for additional resources or see *Section 9*.