To meet the needs of students with retardation, teachers emphasize instruction that will enable their students to have “meaningful participation” in society (Meyen & Skrtic, 1995; Polloway & Patton, 1997). This type of instruction includes the teaching of functional academics. As the IEP team plans the goals and objectives for the student, it is helpful to consider the projected living situations these students will encounter as adults and determine the most appropriate skills to be taught and mastered. Five content areas are often cited as most appropriate for this curriculum for students with mental retardation. They are:

1. Language—including speaking, listening, comprehending, reading, and writing for everyday personal and social use
2. Mathematics—basic skills necessary for daily living
3. Health and Safety—self-care, health, and community living skills
4. Social Skills—acceptable behaviors
5. Career Education—preparation for employment and leisure activities

Communication is the foundation for success in all academic and social endeavors. Consequently, language is the place to begin any curriculum for students with mental retardation. In any classroom of young students with mental retardation, the students will vary in their ability to communicate. Some will use verbal speech (probably not fluently); others will use a combination of words and gestures; some will only gesture; and some may use a sign language to communicate. Teachers need to teach and use in the classroom a communication system that is compatible with the students’ abilities and allows them to meet their needs or get their needs met. Dyer and Luce (1996) suggest that pragmatic communication skills (requesting help or attention, protesting, clarifying directions, taking turns, etc.) should be taught very early through one of several systems: gestural mode, picture communication symbol system, sign language, voice output system, or a verbal system.

The communication system used in the classroom sets the stage for the acquisition of speaking, listening, comprehending, reading, and writing skills. Before the late 1960’s it was thought that children with mental retardation could not learn academics and certainly could not learn to read (Oelwein, 1995). We have come a long way in teaching reading to all students. We are overcoming the prejudice that certain people cannot learn this skill and now understand the importance of phonological awareness to learning to read.

Some teachers have seen improvements in language skills and reading skills with the use of a sign language system of communication in the classroom. In a preschool classroom where two students with hearing impairments were included, the teachers decided to teach all the students sign language (ASL) (Heller, Manning, Pavur, & Wagner, 1998). To monitor the progress of all students and to compare them with a matched preschool class not using sign language, the students were given the Peabody Picture Vocabulary Test (PPVT), a test of receptive language, at the beginning of the year and again at the end of the year. The results showed that those using sign language in the classroom showed significantly greater gains on the PPVT than those not participating in sign. Like the preschool teachers in this study, elementary teachers have noticed improvements in language acquisition and reading skills when combining sign language and speech in teaching in the classroom (personal conversations with cooperating teachers). Some have suggested that the combination is helpful in getting symbols, information, and concepts into long-term memory.

Other modes of instruction found successful in teaching students with mental retardation are based on teacher-directed, student-directed, and peer-mediated methods.

Teacher-Directed Methods

As you know from reading this chapter, we often use components from applied behavior analysis (antecedents, consequences, reinforcements, etc.) to teach students with mental retardation. Other approaches directed by teachers include cognitive training, direct instruction, and integrated unit instruction. Cognitive training and direct instructional methods also are used with children with learning disabilities and are described more fully in the chapter on learning disabilities.

Cognitive training and direct instruction use such techniques as task analysis, modeling, and scaffolding to teach students concepts, skills, and procedures. These approaches to teaching address the memory deficits and lack of self-generated strategies that are often characteristic of students with mental retardation. First, teachers analyze a given task to determine what skills are needed before the student can be taught that skill (prerequisite skills) and what individual skills are needed to complete the task (component skills). To develop a task analysis, teachers often observe someone who is performing the task and record each step. Then, teachers perform the task using the steps they have noted to check for accuracy and completeness. Before beginning instruction, they teach any prerequisite skills students do not have. Using the component skills, the teacher creates his or her lesson plans for this skill. The component skills also can be used to teach the student a practical strategy for the task. Teachers will need to use modeling to demonstrate the use of the strategy and scaffolding to “support as needed” the student’s efforts at learning the strategy as well as the task. The examples below illustrate modeling, strategy generation, and scaffolding.

Teachers model both observable and nonobservable behavior. By “thinking aloud” as they complete tasks, teachers model their thinking for students. Olson and Platt (1992) provide the following example of a think-aloud used by Mr. Clarke as he taught reading:

Today, I’d like to share with you a strategy I use when I come to a word that I don’t know. . . . [Mr. Clarke reads the first sentence, “The weatherman said there will be snow flurries.”] I know I’ve heard the word “flurries” before, but I don’t know what it means. The word before “flurries” is “snow,” so it has something to do with snow . . . I’ll read on. The next sentence says, “When the
little boy heard the weather report, he became angry, because he wanted to build a snowman.” I think that can help me, because I know that you have to have a lot of snow to build a snowman. Now, I may know what the word means. I’ll bet it means light snow. Let me go back and check. (p. 212)

Frequently, teachers supplement think-alouds by giving students a list of the steps involved in solving the problem. For example, in the think-aloud described above, Mr. Clarke provided students with the following strategy or procedural steps:

1. Read the unknown word in the sentence.
2. See if any other words in the sentence can help you figure out the unknown word.
3. Use any background information you have to help you.
4. Read more of the sentences.
5. Repeat steps 2 and 3.
6. Substitute the new meaning.
7. Reread the sentences to see if the new meaning makes sense.
   (Olson & Platt, 1992)

Like modeling, scaffolding is a teacher-directed approach that encourages increased student participation as teacher support is decreased. Bos and Vaughn (1997) suggest that scaffolding provides “an adjustable and temporary support that can be removed when no longer necessary” (p. 50). Teachers can use scaffolding in many situations with various techniques. Hendrickson and Frank (1993) give an example using a teacher-questioning sequence known as response-dependent questioning. Moving from full support to no support:

1. The teacher begins with a complete model question, such as: “Lynn bought a new car. Now you tell me what did Lynn do?”
2. Decreasing the support of the complete model in subsequent discussions, the teacher asks yes-or-no questions, such as: “Did Lynn buy a new car?”
3. Next, the teacher asks a restricted alternative question, such as: “Lynn did not watch television or go to the park. What did Lynn do?”
4. The teacher then moves the student toward less support by asking a multiple-choice question, such as: “Did Lynn watch television, go to the park, or buy a car?”
5. Finally, the teacher asks an open question, such as: “What did Lynn do on Saturday?”

The teacher might choose to start the sequence with the open question, building the scaffold as the student’s needs dictate toward the full support of the complete model question and then removing the support as the student responds with less prompting or cueing.

Integrated unit instruction (integrated curriculum) addresses the needs of students with mental retardation to learn concepts and skills across the curriculum in real-life situations. For example, map-making skills can be very practical when students make meaningful maps of the area in which they live and the places they need to visit (grocery, doctor, school, etc.). Likewise, math skills are more practical when tied to grocery shopping. Good nutrition can also be tied into a unit on grocery shopping. As culminating activities for these units, teachers often plan a field trip to the grocery store so that students can show their newly acquired skills of following a map, planning a menu for a nutritious meal, shopping from a list of needed items for the meal, and keeping to a budget.

Student-Directed Procedures

Increasingly, educators are facilitating students’ use of self-regulation procedures, such as self-monitoring, self-administering consequences, and self-instruction. These procedures are student directed and promote student independence. Self-monitoring involves teaching students to record their own behaviors so they become aware of their behaviors and regulate them. Self-administering requires students, not teachers, to give themselves predetermined consequences contingent on their own behaviors. A recent review of self-management procedures used to teach persons with mental retardation reported that these two procedures typically are used to increase the occurrence of behaviors students already know how to perform, such as work and daily living skills (Harchik, Sherman, & Sheldon, 1992). Self-instruction, which involves students making directive verbal statements about their own behaviors, is used to teach skills students have not yet mastered, such as academic skills (Harchik et al., 1992). (See Chapter 5 for additional information about these procedures.)

Peer-Mediated Procedures

Given the context of large, heterogeneous classes, teachers often use peer-mediated procedures to provide the additional practice and individual help students with mental retardation need. One such arrangement is peer tutoring, a technique that under certain conditions has been shown to benefit both tutor and tutee academically, behaviorally, and socially. In student tutoring programs, teachers typically provide instruction to all class members. Then students in the class (peer tutors) or older students (cross-age tutors) who have mastered the learning assist those individuals who require additional instruction and practice.

Tutors can take on a variety of responsibilities, such as reviewing lessons, directing and monitoring the performance of newly learned skills, and providing feedback and reinforcement. Planning, supervising, and evaluating a peer-tutoring program requires careful planning and ongoing supervision by the teacher. Several studies and reviews (Gerber & Kaufman, 1981; Jenkins & Jenkins, 1985; Knapczyk, 1989) indicate that several conditions are necessary for effective peer tutoring. They include:

1. Tutors are trained to understand instructional objectives, discriminate between correct and incorrect responses, deliver feedback and reinforcement, and monitor progress and record keeping.
2. Instructional steps are carefully sequenced and clearly outlined in a lesson format that tutors can follow easily.
3. Teachers actively monitor tutor and tutee performance frequently.
4. Teachers provide reinforcement frequently and consistently to the tutor and tutee contingent on their appropriate performances.
5. Tutorial sessions are scheduled for approximately fifteen to thirty minutes at least two or three times each week.

The inclusion of students with severe retardation in general education classrooms has resulted in increased interest among educators in procedures that promote improvement in skills and enhance the social acceptance of these students. Recent reviews of methods for individualizing curriculum and instruction reported by Thousand and Villa (1990) suggest three approaches in addition to peer tutoring: mastery learning, computer-assisted instruction, and cooperative learning.

To implement mastery learning, teachers conduct frequent, brief assessments of each student (e.g., curriculum-based assessment); develop individual objectives and establish specific preset mastery criteria; provide frequent feedback to students regarding their performance and progress toward mastery; and adjust or supplement instruction or practice for students who do not meet their mastery
criteria. Individual goals include daily living, social, and vocational skills.

Teachers also use computer-assisted instruction (CAI) in several areas of effective teaching. For students with severe retardation, CAI may be used to introduce new information and to supplement teacher instruction (i.e., tutorials). CAI may also be used to provide the additional drill and practice these students require. Consult with a special educator in your school regarding appropriate software programs that meet the specific needs of your students.

Cooperative learning, an arrangement in which diverse students work in small groups to meet common goals, is a third approach teachers use to enhance learning in social and other skill areas. In Vermont, for example, specialists worked with classroom teachers to form cooperative learning groups that included students needing extensive to pervasive support. To illustrate how these students were integrated into cooperative group activities, Thousand and Villa (1990) described a seventh-grade biology lesson in which Bob, a thirteen-year-old with multiple disabilities, was a participant. This lesson focused on dissecting a frog. Although Bob did not participate directly in the dissection, during this process he worked on his individual goals, which centered on structured communication. Group members helped Bob achieve his lesson objectives as they dissected the frog.

In preparing to integrate special students into general education classes and to promote the social acceptance of these students, Lewis and Doorlag (1999) recommend informing classmates about disabilities. Teachers often introduce this topic by discussing the concept of individual differences. Asking students to think about their own strengths and weaknesses promotes awareness of the fact that each person is unique and possesses different abilities and disabilities. Depending on the grade, teachers frequently follow up this discussion with information about disabilities, either directly or with structured assignments and projects in which students conduct their own research. In addition, teachers provide experiences with people who have disabilities (Lewis & Doorlag, 1999). They invite adults with disabilities into the classroom, arrange visits to special education classes in the school, or use commercially developed materials, such as Kids on the Block, which includes puppets portraying children with disabilities. Once students with disabilities are mainstreamed, it is important that teachers provide structured interactions between nondisabled students and students with disabilities, using arrangements such as peer tutoring and cooperative learning.

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Helpful Resources

School Personnel

The special educator who also teaches students who are mentally retarded may provide additional instructional suggestions that have been successful in improving performance. This teacher also can recommend and perhaps obtain learning materials designed for special education students and suggest ways in which regular class materials can be adapted to students with retardation. In addition, he or she can recommend books on a variety of subjects that are of high interest to older students and written at lower reading levels. Finally, this teacher and the school psychologist are good resources for specific cognitive and behavioral information about your student.

Instructional Methods

oral communication (Vol. 2) (3rd ed.). Austin, TX: Pro-Ed.

Literature about Individuals with Mental Retardation*

Elementary

Secondary
Dougan, T., Isbell, L., & Vyas, P. (1983). We have been there: A guidebook for families of people with mental retardation. Nashville, TN: Abingdon. (F)

Software
Alphabet Circus, DLM Teaching Resources, One DLM Park, Allen, TX 75002; call SRA at (800) 843-8855. (Activities focus on letter recognition, alphabetical order, problem solving)
Animal Photo Farm, DLM Teaching Resources, One DLM Park, Allen, TX 75002; call SRA at (800) 843-8855.
Bake and Take, Mindplay, 160 W. Ft. Lowell, Tucson, AZ 85705, (800) 221-7911. (Life skills)
Calendar Skills, Hartley Courseware, 9920 Pacific Heights Boulevard, Suite 500, San Diego, CA 92121, (800) 247-1380.
Clock Works, MECC, 6160 Summit Drive N., Minneapolis, MN 55430-4003, (800) 685-6322. (Time telling on digital and analog clocks).
Comparative Buying Series, MCE, 1800 South 35th Street, Galesburg, MI 49053, (800) 421-4157.

Computer CUP, Amidon Publication, 1966 Benson Avenue, St. Paul, MN 55116, (800) 328-6502 (Nine discs teach basic concepts such as right-left, as many, beginning).
Counting Critters, MECC, 6160 Summit Drive N., Minneapolis, MN 55430, (800) 685-6322 (Basic number skills 1–20)
Daily Living Skills, Looking Glass Learning Products, 276 Howard Avenue, Des Plaines, IL 60018-1906, (800) 545-5477. (Reading prescriptions, medical product labels, classified ads, telephone directory, job applications, and paychecks)
Dinosaurs, Advanced Ideas, 591 Redwood Highway, Mill Valley, CA 94941, (415) 388-2430. (Game format teaches matching, sorting, and counting)
Job Success Series, MCE, 1800 South 35th Street, Galesburg, MI 49053, (800) 421-4157.
Library and Media Skills, Educational Activities, P.O. Box 392, Freeport, NY 11520, (800) 645-3739.
Library Skills, Micro Power & Light Company, 8814 Sanshire Avenue, Dallas, TX 75231, (214) 553-0105.
Reader Rabbit, Learning Company, 6493 Kaiser Drive, Fremont, CA 94555, (510) 792-2101.
Spell It!, Davidson & Associates, 1984 Pioneer Avenue, Torrance, CA 90503, (800) 545-7677.
Stickybear Town Builder, Optimum Resource, Inc., 18 Hunter Road, Hilton Head, SC 29926, (888) 784-2592. (Map reading, planning, hypothesizing, problem solving)
Telling Time, Random House School Division, 400 Hahn Road, Westminster, MD 21157, (800) 726-0600.
Vocabulary Challenge, Learning Well, 200 South Service Road, Roslyn Heights, NY 11577, (516) 326-2101.
Vocabulary Game, J & S Software, 14 Vanderventer, Port Washington, NY 11050.
Ways to Read Words, Queue Intellectual Software, 338 Commerce Drive, Fairfield, CT 06432, (800) 232-2224.
Work Habits for Job Success, MCE, 1800 South 35th Street, Galesburg, MI 49053, (800) 421-4157.

Organizations
ARC, The, 500 E. Border Street, Suite 300, Arlington, TX 76010, (817) 261-6003, fax (817) 277-3491.
Mental Retardation Association of America, 211 E. 300 Street, Suite 212, Salt Lake City, UT 84111, (801) 328-1574.
National Association for Down Syndrome, P.O. Box 4542, Oak Brook, IL 60522, (630) 325-9112.

Bibliography for Teaching Suggestions


*F = fiction; NF = nonfiction


