Planning Instruction by Analyzing Classroom and Student Needs
LEARNER OBJECTIVES

After you read this chapter, you will be able to

1. Explain what it means to make reasonable adaptations for students with special needs.
2. Describe the steps of the INCLUDE decision-making process for accommodating students with special needs in your classroom.
3. Identify and describe the key elements of a classroom environment.
4. Describe the major components of classroom organization, and explain how they can be adapted for students with special needs.
5. Explain various ways that students can be grouped for instruction in an inclusive classroom.
6. Explain how the use of effective classroom materials and instructional methods can benefit students with special needs.

MR. RODRIGUEZ TEACHES world history at a large urban high school. When he introduces new content to his students, he teaches to the whole class at once. First, he reviews material that has already been covered, pointing out how that material relates to the new content being presented. Next, he provides any additional background information that he thinks will help students understand the new material better. Before Mr. Rodriguez actually presents new material he hands out a partially completed outline of the major points he will make. This outline helps students identify the most important information. Every 10 minutes or so he stops his lecture and allows students to discuss and modify the outline and ask questions. When Mr. Rodriguez completes his lecture he organizes students into cooperative learning groups of four to answer a series of questions on the lecture. Manuel is a student with a learning disability in Mr. Rodriguez’s class. He has a history of difficulty staying on task during lectures and figuring out what information to write down. He also has trouble remembering information from one day to the next.

How well do you think Manuel will perform in Mr. Rodriguez’s class? What changes in the classroom environment might help Manuel to succeed?

JOSH HAS CEREBRAL PALSY. He is in the normal range in ability. However, he has lots of trouble with muscle movements, has little use of his lower body and legs and also has problems with fine muscle coordination. As a result, Josh uses a wheelchair, has trouble with his speech (he speaks haltingly and is difficult to understand) and struggles to write letters and numbers correctly. Josh is included in Ms. Stewart’s second-grade class.

What aspects of the classroom environment do you think Ms. Stewart will need to adapt for Josh? How do you think she could use technology to facilitate Josh’s inclusion?
Disabilities and other special needs arise when characteristics of individual students and various features of students’ home and school environments interact. Effective teachers analyze their classroom environment in relation to students’ academic and social needs and make adaptations to ensure student success in the classroom. For example, Manuel has difficulty staying on task and retaining new information. However, features of Mr. Rodriguez’s class make it easier for Manuel to function. The partially completed lecture outlines help Manuel focus his attention on specific information as he tries to listen and stay on task; the pauses help him catch any lecture information he might have missed. The review sessions are intended to help Manuel retain information by giving him a mechanism for rehearsing newly learned material. In another case, Josh has some serious motor problems, but he may be able to function quite independently if Ms. Stewart makes her classroom accessible to a wheelchair and works with special educators to use assistive technology to meet Josh’s needs in handwriting and oral communication.

This chapter introduces you to a systematic approach to helping all students with special needs gain access to the general education curriculum, a requirement of IDEA. Part of that approach is for you to be the best teacher you can be so that fewer of your students require individualized instruction in the first place. Despite your best efforts, however, there will always be students who require a more individualized approach. The INCLUDE strategy is provided for these students. Although there are other ways to adapt instruction for students with special needs, INCLUDE gives teachers a systematic process for making adaptations for students based on their individual needs and the classroom demands on or expectations of the teacher. The rest of the text—especially Chapters 8 through 13, in which specific strategies are presented—expands and elaborates on this approach. Later chapters also present a more in-depth look at the relationship between your classroom environment and the diverse needs of learners. An important assumption throughout the text is that the more effective your classroom structure is, the greater the diversity you will be able to accommodate and the fewer individualized classroom changes you will need to make.

How Can the INCLUDE Strategy Help You Make Reasonable Adaptations for Students with Special Needs?

At a recent conference presentation that included both classroom teachers and special education teachers, one of the authors of this text asked the audience how many of those present worked with students with disabilities. A music teacher at the back of the room called out, “Everyone in schools works with students with disabilities!” He is right. As you have learned in the previous chapters, IDEA entitles students with disabilities to “access,” “participation,” and “progress” in the general education curriculum. These entitlements were reinforced by the No Child Left Behind Act of 2001 (NCLB), which requires that most students with disabilities meet the same standards as their classmates without disabilities. Therefore, although the professionals who specialize in meeting the needs of students with disabilities are valuable and provide critical instructional and support systems for students, ultimately, you and your peers will be the primary teachers for many students with disabilities and other special needs, and you will form partnerships with special educators to meet the needs of others. That makes it critical for you to feel comfortable making adaptations for students in order for them to have fair access to your curriculum.

INCLUDE gives teachers a systematic process for making adaptations for students based on their individual needs and the classroom demands on or expectations of the teacher.
The INCLUDE strategy is based on two key assumptions. First, student performance in school is the result of an interaction between the student and the instructional environment (Pisha & Coyne, 2001; Smith, 2004). Consequently, what happens in a classroom can either minimize the impact of students' special needs on their learning or magnify it, making adaptations necessary. In the first chapter-opening example, Mr. Rodriguez engaged in a number of teaching practices that minimized the impact of Manuel’s learning disability, such as starting each class with a review of material covered the day before, providing the students with lecture outlines to help them identify important ideas, and engaging his students in regular discussions of the material presented. Nevertheless, if part of Manuel’s learning disability is in reading and the classroom text used in Mr. Rodriguez’s class is too difficult for Manuel to read independently, Mr. Rodriguez will need to make an individualized adaptation for Manuel as well.

The second key assumption of INCLUDE is that by carefully analyzing students’ learning needs and the specific demands of the classroom environment, teachers can reasonably accommodate most students with special needs in their classrooms. You can maximize student success without taking a disproportionate amount of teacher time or diminishing the education of the other students in the class. For example, with the help of the special education teacher, Mr. Rodriguez provided Manuel with a digital text with a built-in speech-to-print component and study guide. Soon, Mr. Rodriguez discovered that other students in the class could also benefit from using the digital text and made it available to them. In this way, reasonable adaptations often assist many students in the class.

The INCLUDE strategy contains elements of both universal design and differentiated instruction, two widely recognized approaches to addressing classroom diversity in general, and inclusion in particular. The idea of universal design originated in the field of architecture, where it was learned that designing buildings for persons with diverse needs from the beginning makes them more accessible and saves money spent on costly retrofits of ramps and automatic doors. As applied to classrooms, the idea is that instructional materials, methods, and assessments designed with built-in supports are more likely to be compatible with learners with special needs than those without such supports (Curry, 2003; Hitchcock, Meyer, Rose, & Jackson, 2002; Pisha & Coyne, 2001), and they minimize the need for labor-intensive adaptations later on. For example, print alternatives such as graphics, video, and digital text allow students with
reading problems to more readily access subject content. The use of templates with partially filled-in sections and links to more information can help students construct a better essay. The INCLUDE assumption that a well-designed classroom requires fewer adaptations for students with special needs is consistent with the universal design approach.

The idea behind differentiated instruction is that a variety of teaching and learning strategies are necessary to meet the range of needs evident in any given classroom. According to Tomlinson (2000), students’ diverse needs can be met by providing materials and tasks at varied levels of difficulty, with varying degrees of support, through the use of multiple grouping arrangements and with time variations. The INCLUDE process of determining student supports based on student needs and classroom demands is an ideal vehicle for implementing differentiated instruction in your classroom. See the Professional Edge in Chapter 9 on page 314 for an example of differentiated instruction as it applies to beginning reading instruction for students with special needs.

The INCLUDE strategy for accommodating students with special needs in the general education classroom follows seven steps:

Step 1: Identify environmental, curricular, and instructional classroom demands.
Step 2: Note student learning strengths and needs.
Step 3: Check for potential areas of student success.
Step 4: Look for potential problem areas.
Step 5: Use information gathered to brainstorm instructional adaptations.
Step 6: Decide which adaptations to implement.
Step 7: Evaluate student progress.

These steps are designed to apply to a broad range of special needs and classroom environments. Throughout this text, this icon will denote suggestions for accommodations according to this strategy, with an emphasis on the appropriate step.

**Step 1: Identify Classroom Demands**

Because the classroom environment significantly influences what students learn, identifying and analyzing classroom requirements allows teachers to anticipate or explain problems a given student might experience. Then, by modifying the environment, teachers can solve or reduce the impact of these learning problems. Common classroom demands relate to classroom organization, classroom grouping, instructional materials, and instructional methods.

**CLASSROOM ORGANIZATION**

- The ways in which a teacher establishes and maintains order in a classroom are referred to as classroom organization (Doyle, 1986). Classroom organization includes a number of factors:
  - Physical organization, such as the use of wall and floor space and lighting
  - Classroom routines for academic and nonacademic activities
  - Classroom climate, or attitudes toward individual differences
  - Behavior management, such as classroom rules and monitoring
  - The use of time for instructional and noninstructional activities

Classroom organization strategies can have real benefits for students with special needs. For example, LaVerna is a student who needs adaptations in physical organization; she uses a wheelchair and requires wide aisles in the classroom and a ramp for the
step leading to her classroom. Shawn has behavioral difficulties and thus would benefit from a behavior management system; he might go to his next class prior to the end of each period to eliminate potential opportunities to fight with classmates. He would also benefit from an efficient use of time; minimizing transition times or the amount of time between activities would eliminate further opportunities for inappropriate interactions with his classmates.

CLASSROOM GROUPING

Teachers use a variety of classroom grouping arrangements. Sometimes they teach the whole class at once, as when they lecture in a content area such as social studies. Other times teachers may employ small-group or one-to-one instruction. For example, they may teach a small group of students who have similar instructional needs, such as a group of students who all require extra help on multiplication facts, or an individual student who needs extra help with an English assignment. Teachers may also group students of differing interests and abilities in an effort to foster cooperative problem solving and/or peer tutoring. Students respond differently to these types of groupings. For example, Mike needs adaptations in classroom grouping in order to succeed; he might do better in a small group in which other students read assignments aloud so that he can participate in responding to them.

INSTRUCTIONAL MATERIALS

The types of instructional materials teachers use can have a major impact on the academic success of students with special needs. Although many teachers are choosing to develop or collect their own materials, published textbooks are most commonly used. Published textbooks include basic skills texts called basals, often used in reading and mathematics, and texts that stress academic content in areas such as history and science. Other materials commonly used by teachers include concrete representational items such as manipulatives and technological devices, including audiovisual aids, telecommunication systems, and computers. Roberta’s use of large-print materials to assist her in seeing her work and Carmen’s use of a study guide to help her identify important information in her history text are both examples of adaptations in instructional materials.

INSTRUCTIONAL METHODS

The ways in which teachers present content or skills to students and evaluate whether learning has occurred are the essence of teaching and are crucial for accommodating students with special needs. These are their instructional methods. Teachers use a number of different approaches to teach content and skills. Sometimes they teach skills directly, whereas other times they assume the role of a facilitator and encourage students to learn on their own. Instructional methods also involve student practice that occurs either in class, through independent seatwork activities, or out of class, through homework. Ms. Correli’s decision to use a PowerPoint presentation in class and then give Lon a copy of the slides to help his learning is an example of adapting the presentation of subject matter. Using a paraprofessional to write a student’s words is an example of adapting student practice.

Student evaluation, or determining the extent to which students have mastered academic skills or instructional content, is an important aspect of instructional methods. Grades are frequently used to communicate student evaluation. For some students, grading is an appropriate evaluation strategy. But for others, such as Anita, a fifth-grade student who has a moderate intellectual disability and is learning to recognize her name, a narrative report might be a better evaluation tool.

When evaluating students with disabilities, teachers must focus on measuring what a student knows rather than the extent of his or her disability. For example, Alex, who has a severe learning disability in writing, may need to answer test questions orally to
convey all he knows; if he gives written answers, you may be measuring only his writing disability.

Step 2: Note Student Learning Strengths and Needs

Once instructional demands are specified, the N step of INCLUDE calls for noting student strengths and needs. Remember that students with disabilities are a very heterogeneous group; a disability label cannot communicate a student’s complete learning profile. For example, some students with cognitive disabilities can learn many life skills and live independently, whereas others continually need daily assistance. Also, keep in mind that students with disabilities are more like their peers without disabilities than different from them. Like their nondisabled peers, they have patterns of learning strengths and weaknesses. Focusing on strengths is essential (Epstein, 2004; Epstein, Rudolph, & Epstein, 2000; Shaywitz, 2003). Three areas describe student learning strengths and needs: academics, social-emotional development, and physical development. Problems in any one of these areas may prevent students from meeting classroom requirements, resulting in a need for adaptations.

ACADEMICS ● The first part of academics is basic skills, including reading, math, and oral and written language. Although these skills might sometimes be bypassed (for example, through the use of a calculator in math), their importance in both elementary and secondary education suggests you should consider them carefully. For example, a student with a severe reading problem is likely to have trouble in any subject area that requires reading, including math, social studies, and science, and on any assignment with written directions.

Cognitive and learning strategies make up the second part of academics. These strategies involve “learning how to learn” skills, such as memorization, textbook reading, note taking, test taking, and general problem solving. Such skills give students independence that helps them in adult life. Students with problems in these areas experience increasing difficulty as they proceed through the grades. For example, students who have difficulty memorizing basic facts have trouble learning to multiply fractions, and students who cannot take notes could fall behind in a history course based on a lecture format.

Survival skills, the third area of academics, are skills practiced by successful students, such as attending school regularly, being organized, completing tasks in and out of school, being independent, taking an interest in school, and displaying positive interpersonal skills (Brown, Kerr, Zigmond, & Harris, 1984; Vallecorsa, deBettencourt, & Zigmond, 2000). Students lacking in these areas usually have difficulty at school. For example, disorganized students are not likely to have work done on time, nor are they likely to deliver parent permission forms for field trips to their parents or return them to school. Survival skills also help some students compensate for their other problems. For example, given two students with identical reading problems, teachers sometimes offer more help to the student who has good attendance and tries hard.

SOCIAL-EMOTIONAL DEVELOPMENT ● Students’ social-emotional development involves classroom conduct, interpersonal skills, and personal-psychological adjustment. Classroom conduct problems include a number of aggressive or disruptive behaviors, such as hitting, fighting, teasing, hyperactivity, yelling, refusing to comply with requests, crying, and destructiveness. Although most of these behaviors may be exhibited by all children at one time or another, students with special needs may engage in them more frequently and with greater intensity. Conduct problems seriously interfere with student learning and can lead to problems in interpersonal relations and personal-psychological adjustment. For example, students who are disruptive in class are less likely to learn academic skills and content; their outbursts also may be resented.
by their peers and may lead to peer rejection, social isolation, and a poor self-image.

Interpersonal skills include but are not limited to initiating and carrying on conversations, coping with conflict, and establishing and maintaining friendships. Although these skills are not ordinarily part of the explicit school curriculum, their overall impact on school adjustment makes them important. For example, students lacking in peer support may have difficulty completing group projects (an example of student practice) or finding someone to help with a difficult assignment (an example of homework).

Personal-psychological adjustment involves the key motivational areas of self-image, frustration tolerance, and proactive learning. For example, students with a poor self-image and low tolerance for frustration may do poorly on tests (an example of student evaluation); students who are inactive learners may have difficulty pursuing an independent science project (an example of student practice).

PHYSICAL DEVELOPMENT • Physical development includes vision and hearing levels, motor skills, and neurological functioning. Students with vision problems need adapted educational materials. Students with poor fine motor skills may need a computer to do their homework, an adaptation for student practice. Finally, students with attention deficits may need a wider range of approaches for instruction, including lecture, discussion, small-group work, and independent work.

Step 3: Check for Potential Areas of Student Success

The next INCLUDE step is C, analyzing student strengths in view of the instructional demands identified in Step 1 and checking for activities or tasks students can do successfully. Success enhances student self-image and motivation. Look for strengths in both academic and social-emotional areas. Reading the “Current Levels of Performance” section of the IEP is a good way to begin identifying a student’s strengths. For example, Jerry doesn’t read but can draw skillfully. In social studies, his teacher asks him to be the class cartographer, drawing maps for each region of the world as it is studied. Kurt has a moderate intellectual disability and learns very slowly, but he always comes to school on time. His second-grade teacher appoints him attendance monitor. Dwayne has attention deficit–hyperactivity disorder, is failing all his classes in school, and is beginning to become difficult to handle at home. His parents and teachers have noticed, however, that he is able to identify personal strengths, has a good sense of humor, and can enjoy a hobby. They support Dwayne’s positive interests by enrolling him in the school band.

Step 4: Look for Potential Problem Areas

In the L step of the INCLUDE strategy, student learning needs are reviewed within a particular instructional context, and potential mismatches are identified. For example, Susan has a learning need in the area of expressive writing; she is unable to identify spelling errors in her work. This is an academic learning need. When evaluating students’ work her history teacher, who believes that writing skills should be reinforced in every class, deducts one letter grade from papers that contain one or more spelling errors. For Susan to succeed in history class, this mismatch needs to be addressed. Similarly, Sam has a severe problem that prevents him from speaking fluently. This physical problem creates a learning need. His fourth-grade teacher requires that students present book reports to the class. Again, a potential mismatch exists that could prevent Sam from succeeding. Mismatches such as those experienced...
by Susan and Sam are resolved by making adaptations, the topic of the next two
INCLUDE steps.

**Step 5: Use Information to Brainstorm Adaptations**

Once potential mismatches have been identified, the **U** step of INCLUDE is to use
this information to identify possible ways to eliminate or minimize their effects. IDEA
stipulates that two types of adaptations may need to be made for students with disabili-
ties: accommodations and modifications. The Professional Edge below summarizes
points to keep in mind when making instructional adaptations for students.

**ACCOMMODATIONS**

- **Instructional accommodations** are typically defined as
  services or supports provided to help students gain full access to class content and in-
  struction, and to demonstrate accurately what they know (Nolet & McLaughlin, 2000).
  It is important to remember that with accommodations, school expectations that stu-
dents meet learning standards remain unchanged. This means that students with dis-
abilities receiving accommodations are expected to learn everything their classmates

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**PROFESSIONAL EDGE**

**Selecting Appropriate Instructional Adaptations**

The following list of general guidelines can help you make reasonable adaptations in instruction.

- Employ an adaptation only when a mismatch occurs. Your
time and energy as a teacher are limited; make changes
only when necessary.

- Be certain that the student’s problems are not physical in
origin before you make any adaptations. This concern re-
lates particularly to students with no obvious physical or
sensory needs. Prior to adapting your class for a student
with an attentional problem, be sure that the problem is
not the result of a hearing loss, seizure disorder, or other
physical problem.

- Determine whether you are dealing with a “can’t” or a
“won’t” problem. Blankenship and Lilly (1981) describe a
“can’t” problem as one in which the student, no matter
how highly motivated, is unable to do what is expected.
A “won’t” problem implies that the student could do what
is expected but is not motivated to do so. Each type of
problem may require a different adaptation.

- A student unable to do what is expected might need a by-
pass strategy; a student unwilling to do the work might
need a behavior management strategy. This distinction
can also save you time. For example, if a student fails a
test because she doesn’t feel like working on the day of
the test, a teacher’s attempt to provide extra tutorial as-

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**FROM THE RESEARCH**

A number of recent studies show that students with disabil-
ities have definite preferences for certain adaptations in the
areas of homework (Nelson, Epstein, Bursuck, Jayanthi, &
Sawyer, 1998), testing (Nelson, Jayanthi, Epstein, & Bur-
suck, 2000), and grading (Bursuck, Munk, & Olson, 1999)
and that student acceptance of an adaptation can affect its
implementation and effectiveness (Reimers, Wacker, &
Koeppl, 1987). Further, students believe that particular
adaptations can affect their emotional well-being, their in-
teractions with teachers and peers, their success in school,
and their desire to learn in ways suitable to them (Nelson et
al., 1998). Therefore, we suggest that you actively seek stu-
dent input when choosing adaptations for your students.
without disabilities are supposed to learn (Nolet & McLaughlin, 2000). Examples of accommodations include bypassing students’ learning needs by allowing them to employ compensatory learning strategies, making an adjustment in classroom teaching or organization, and teaching students basic or independent learning skills.

_Bypass or compensatory strategies_ allow students to gain access to or demonstrate mastery of the school curriculum in alternative ways. For example, a bypass strategy for Susan, the student with a serious problem with spelling, would be a computerized spell-checker. Alternatively, a peer could help her proofread her work. However, bypassing cannot be used in a primary area of instruction. In other words, Susan cannot spell-check her spelling test, but she can spell-check her history homework. Also, bypassing a skill does not necessarily mean that the skill should not be remediated. Susan may need spelling instruction as part of her English class. Finally, bypass strategies should encourage student independence. For example, Susan might be better off learning to use a spell-checker rather than relying on a peer proofreader.

Teachers can also provide accommodations in their classroom teaching and organization to help students succeed. For example, if Ramos has attention problems, he might be seated near the front of the room, and he might benefit from a special system of rewards and consequences as well as a classroom from which “busy” bulletin board displays are removed. All these are classroom organization adaptations. A change in classroom instruction would be to call on Ramos frequently during class discussions and to allow him to earn points toward his grade for appropriate participation.

A third option for accommodating students with special needs is to provide intensive instruction on basic skills and learning strategies. Often, a special education teacher carries out this instruction in a resource room. This approach assumes that basic skills and learning strategies are prerequisites for successful general education experiences. It also assumes that some children require instruction delivered with a greater degree of intensity than can reasonably be provided by a general educator responsible for 20–30 students (Bursuck, Smith, Munk, Darmer, Mehlig, & Perry, 2004). Unfortunately, the results of research on whether skills taught in pullout programs transfer to the general education class are mixed (Kavale & Forness, 2000); some studies show positive results (Freeman & Alkin, 2000; Marston, 1996; Snider, 1997), whereas others show minimal effects (Baker & Zigmond, 1995; Wang, Reynolds, & Walberg, 1988). Studies do suggest that teachers play an important role in determining whether skills taught in a separate setting transfer to their classrooms (Bursuck et al., 2004; Ellis, Lenz, & Sabornie, 1987a, 1987b). For example, Ms. Henry had Jamie in her English literature class; Jamie was receiving pullout services on taking effective lecture notes. First, Ms. Henry found out from the special education teacher what strategy for note taking Jamie was learning. Then she reminded Jamie to perform the strategy before she delivered a lecture, and sometimes even during a lecture. Finally, Ms. Henry collected Jamie’s notes on a weekly basis to see whether she was performing the strategy correctly, giving specific feedback to her as needed and reporting her progress to the special education teacher.

An alternative is for the general education teacher to provide this type of instruction. This option is feasible when many students have similar instructional needs and when the teacher can easily monitor skill development. For example, Mr. Higgins, a seventh-grade science teacher, lectures frequently. As a result, students need to be proficient note takers. At the beginning of the school year, Mr. Higgins noticed during a routine check of student notebooks that many students were not taking adequate notes. With assistance from the special education teacher, he taught note taking as part of science. Three students for whom note taking was especially difficult handed in their notes each day so Mr. Higgins could monitor their progress. Working Together on page 154 discusses a co-teaching situation in which the general education teacher is developing a strategy to provide accommodations in her classroom with the help of the special educator.
MODIFICATIONS

Instructional or curricular modifications are made when the content expectations are altered and the performance outcomes expected of students change (Nolet & McLaughlin, 2000). Typically, students who receive modifications have behavioral and/or intellectual challenges that are so severe that the curricular expectations in general education are inappropriate. These are usually the same students described in Chapter 4 as being eligible for alternate assessments. Instructional modifications are generally of two types: teaching less content and teaching different content (Nolet & McLaughlin, 2000). For example, in order to meet district grade-level science standards, Ms. Lamb’s class was learning to label the parts of the human digestive system and state the purpose for each. Manny, a student with a severe intellectual disability included in Ms. Lamb’s class, met the same learning standard by pointing to his stomach when asked where food goes when it is eaten. This is an example of teaching less content. In contrast, teaching different content means that the curricular outcomes are different from those of the rest of the

The Reluctant Co-Teacher

Juanita Kirk, math teacher, initially was excited about co-teaching with Susan Harris, the special educator assigned to the seventh-grade team. Now, though, she is disillusioned. Although offered paid planning time during the summer, Susan declined to participate, explaining that she had made her family the focus of her summers and that she would not make professional commitments during that time. Juanita could understand that, but then, at their first meeting in the fall, Susan explained to Juanita that she had always disliked math and had not studied it since she was in high school. She said that she would be most comfortable adjusting to co-teaching by spending the first semester taking notes for students, learning the curriculum, and then helping individual students after instruction had occurred. She stated clearly that she did not have much time for preparing outside of class given all her other responsibilities, and she also made it clear that she did not consider it her responsibility to grade student work.

Juanita was surprised. This was not at all what she expected co-teaching to be. She envisioned a partnership where she and her colleague not only could make instruction more intensive but also could energize math instruction by using various grouping arrangements and brainstorming new ways to reach their students. Now 6 weeks into the school year, she is beginning to think that co-teaching is more like having an assistant in the classroom—an assistant who is highly paid for not doing very much work. She wonders if this is how co-teaching looks in English, the other seventh-grade course to which Susan is assigned. If you were Juanita, how would you address this situation?

Addressing the Dilemma

These are some ideas that Juanita could use to make the co-teaching situation with Susan more productive:

- First, Juanita should find a quiet time and a private place to discuss the situation with Susan. She should directly relate to Susan that she is disappointed in how co-teaching has occurred thus far and then wait to see what Susan has to say.
- If Juanita suspects that Susan lacks confidence in her ability to teach math, she might try to get at this topic using a comment such as this: “You’ve mentioned that you haven’t had math since high school. What a change it must be to be assigned to this class! I think we need to talk about topics we’re teaching this year that are most familiar to you so that I don’t inadvertently ask you to lead instruction in an area you haven’t even thought about for years.” This type of statement might prompt Susan to more fully describe what she could do in the classroom.
- As an alternative, Juanita might try being more proactive. For example, she might plan a co-taught set of lessons that call for students to be in three groups, one group having the purpose of reviewing previously taught information (for example, basic problem solving, fractions). She could explain to Susan that after more than a month of adjusting to having a two-teacher classroom, she was ready to try something new, and then describe the plan, offering Susan the review group to lead. If Susan expressed reluctance, Juanita could request that they try this for one week and then review the plan’s success.
An instructional goal for Tony, a student with autism, is to remain calm when there is a change in the classroom schedule. It is important to reserve instructional modifications for students with only the most significant disabilities. Otherwise, instructional modifications reduce a student’s opportunity to learn critical knowledge, skills, and concepts in a given subject, leaving gaps in learning that can interfere with meeting school standards and that can be a disadvantage in later school years and beyond. For example, when one class was learning four reasons for the worldwide spread of AIDS, Steven, a student with a learning disability, was required to learn only two reasons, because he had difficulty remembering information. However, when Steven was required to take the state high-stakes science test, he was held responsible for learning the same information about AIDS as everyone else. It would have been more effective for the school to help Steven better remember science content by using mnemonic devices rather than reducing the amount of information. In short, reducing or simplifying content inappropriately can lead to watering down the curriculum.

Step 6: Decide Which Adaptations to Implement

After you have brainstormed possible accommodations or modifications you can implement the D step in INCLUDE, which involves selecting strategies to try. A number of guidelines are suggested here to help you decide which adaptations best suit your students’ needs.

SELECT AGE-APPROPRIATE ADAPTATIONS  ● Students’ adaptations should match their age. For example, using a third-grade book as a supplement for an eighth-grade science student who reads at the third-grade level would embarrass the student. In such a situation, a bypass strategy such as a taped textbook would be preferable if the student has the necessary background and cognitive skills to listen to the book with understanding. A good rule of thumb is to remember that no students, whether in first or twelfth grade and regardless of their special needs, want to use what they perceive as “baby” books or materials.

SELECT THE EASIEST ADAPTATIONS FIRST  ● Adaptations need to be feasible for the general education teacher. Although making adaptations often means some additional work for you, it should not require so much time and effort that it interferes with teaching the entire class. For instance, it is easier to circle the 6 out of 12 math problems you want Maria to complete than to create a separate worksheet just for her.

SELECT ADAPTATIONS YOU AGREE WITH  ● You are more likely to implement an approach successfully if you believe in it (Polloway, Bursuck, Jayanthi, Epstein, & Nelson, 1996), especially in the area of behavior management. For example, in selecting rewards for good behavior, if you are uncomfortable with giving candy try giving time for desirable activities such as time on the computer. However, adaptations should not be considered only in light of teacher beliefs. IDEA is clear that the unique needs of students take precedence over the convenience of schools. With imagination and some input from special educators, you will undoubtedly find strategies that match your teaching approach while maximizing your students’ learning.

SELECT ADAPTATIONS WITH DEMONSTRATED EFFECTIVENESS  ● Over the past 30 years, a massive body of professional literature on effective teaching practices has accumulated. This research can help you avoid fads and other unvalidated practices. The strategies suggested throughout this text are based on research and form a starting point for your understanding of validated practices. Such an understanding has always been important, but it is particularly important in view of the recent

CONNECTIONS

Alternate assessments are described in Chapter 4.
emphasis placed on evidence-based practices in NCLB. Another means of staying professionally current is to read relevant professional journals.

**Step 7: Evaluate Student Progress**

Although many effective teaching practices exist, it is difficult to predict which will be effective for a given student. As a result, once an adaptation is implemented, the *E* step of INCLUDE is essential: evaluate strategy effectiveness. You can track effectiveness through grades; observations; analysis of student work; portfolios; performance assessments; and teacher, parent, and student ratings. Evaluating this information helps you decide whether to continue, change, or discontinue an intervention.

In the next section the relationship between your classroom and the diverse needs of learners is examined. As you have read, the use of effective practices allows teachers to accommodate more diversity in their classrooms while at the same time reducing the need for making more individualized adaptations. The key aspects of classroom environments are shown in Figure 5.1. These features include classroom organization, classroom grouping, instructional materials, and instructional methods.

**How Is an Inclusive Classroom Organized?**

Your classroom organization involves physical organization, routines for classroom business, classroom climate, behavior management systems including classroom rules and monitoring, and the use of time. You may need to use the INCLUDE strategy to make reasonable adaptations for students with special needs in all these areas.

**Physical Organization**

Although the direct effects of physical organization on student academic performance are open to interpretation (Doyle, 2002), the way a classroom is physically organized can affect student learning and behavior in a number of areas (Kerr & Nelson, 1998). Carefully arranged classrooms can decrease noise and disruption, improve the level and quality of student interactions, and increase the percentage of time that students spend on academic tasks (Paine, Radicchi, Rosellini, Deutchman, & Darch, 1983). Classroom organization influences learning conditions for all students, as well as the accessibility of instructional presentations and materials for students with sensory and physical disabilities. Physical organization includes the appearance of the classroom and the use of space, including wall areas, lighting, floor space, and storage.

Wall areas can be used for decorating, posting rules, displaying student work, and reinforcing class content, sometimes through the use of bulletin boards. For example, one teacher taught a note-taking strategy and posted the steps on a bulletin board to help her students remember them. In using wall space, keep in mind two possible problems. First, wall displays may divert students with attention problems from concentrating on your instruction. Place these students where they are least likely to be distracted by displays. Second, students may not notice that important information appears on a display, and you may need to direct their attention to it. For example, Ms. Huerta posted a display showing graphic representations of the basic fractions. She reminded her students to look at these fractions while they were doing their independent math work.

Lighting, either from windows or ceiling lights, also can affect students with special needs. Students with hearing impairments might need adequate light to speech-
read; they also are likely to have problems with glare in areas where the light source comes from behind the speaker. Students with visual impairments also have difficulty working in areas that are not glare-free and well lighted. Occasionally, students with learning disabilities or emotional disturbances may be sensitive to and respond negatively to certain types of light. In most cases, problems with lighting can be remedied easily by seating students away from the glare caused by sunshine coming through the classroom windows.
The organization of floor space and the kinds and placement of furniture used also need to be considered. For example, floors that do not have a nonslip surface can make wheelchair and other travel difficult. Furniture that is placed in lanes can block access to the chalkboard or materials such as computers and make mobility difficult for students in wheelchairs or students with visual impairments. Tables, pencil sharpeners, and chalkboards that are too high may prove inaccessible to students who use wheelchairs. Desks that are too low can interfere with students who have prostheses (artificial limbs). Placement and configuration of special equipment in science labs, computer centers, and vocational areas also can present difficulties in accessibility for students with special needs. For example, the lathe in the woodworking room might be positioned too high for a person in a wheelchair to operate; the space between work areas in the science lab might not be wide enough for a wheelchair to pass.

The arrangement of your class should be predictable. This means that you should not make major changes without first considering their impact on students with special needs and then informing these students so they have time to adapt. For example, Mr. Tate decided to move one of the bookshelves in his classroom. He noticed, however, that the new location would block the passageway from the door to the desk of a student in his class who was blind. Mr. Tate informed the student of the move in advance, and together they worked out an alternative route to the student’s desk.

The arrangement of student desks, whether in rows, circles, or small groups, can have considerable impact on students with special needs. For example, traditional row configurations, which provide students with an immediate, unobstructed view of the teacher, have been shown to help students with attention disorders focus better when the teacher is instructing the whole group at one time. However, the placement of desks into clusters of four works better when you are using mixed-ability, cooperative learning groups to help integrate a student who is socially withdrawn. Another important consideration about floor space concerns student monitoring: Teachers should be able to see all parts of the classroom at all times, whether they are teaching large or small groups or are working at their desks. Designing such visual access means that all specially designated areas in the classroom, such as learning/interest centers, computer stations, small-group instructional areas, and study carrels, need to be positioned so they can be monitored.

An additional area of physical organization is storage. For example, students with visual disabilities may need to store equipment such as tape recorders, large-print books, braille books, and magnifying devices. For students with severe disabilities, space might be needed to store book holders, paper holders, page turners, braces, crutches, and communication boards.

**Routines for Classroom Business**

Establishing clear routines in both academic and nonacademic areas is important for two reasons. First, routines that are carefully structured (that is, clear to students and used consistently) reduce nonacademic time and increase learning time. Second, you can prevent many discipline problems by having predictable classroom routines.

Most students, especially those with special needs, find stability in knowing that classroom activities will be similar each day. In the absence of this stability, misbehavior often follows. You can find many examples of misbehavior related to breaks in
school routines. On the day of a field trip, elementary school students are more likely to hit or push, to delay beginning assignments, and to do poor work. In middle schools and high schools, teachers often dread shortened schedules for assemblies and other school programs because of increased student behavior problems.

You can create daily classroom routines that help students learn. For example, you might expect fourth graders to enter your classroom each morning, begin their morning work, and read quietly if they finish before instruction begins. Having routines for sharing time, for setting up science experiments, for preparing to go to physical education, for moving to the computer lab, and so on helps students meet your expectations. Routines are especially helpful to students who need a strong sense of structure in classroom life. In secondary schools, routines might include having specific lab procedures, starting each class with a 5-minute review, or scheduling a particular activity on the same day every week. For example, in a geometry class, students who complete their assignments might choose to begin the day’s homework, complete a Math Challenger worksheet from the activity file, or work on research papers or other long-term projects.

Classroom Climate

A number of authors have noted that classroom climate contributes significantly to the number and seriousness of classroom behavior problems (Jones & Jones, 1990; Morse, 1987). The classroom climate concerns the overall atmosphere in the classroom—whether it is friendly or unfriendly, pleasant or unpleasant, and so on. Climate is influenced by the attitudes of the teacher and students toward individual differences. For instance, is the classroom characterized by a cooperative or a competitive atmosphere? Is the classroom a safe place for all students to take risks? Are skills for interacting positively with children and adults actively supported in the classroom?

Teachers who communicate respect and trust to their students are more successful in creating positive classroom environments in which fewer behavior problems occur (Arends, 2004). For example, Mr. Elliott reprimanded a student who talked out of turn by saying, “I know you have a question about your work, and I’m glad you care enough to ask for help; but I need to have you raise your hand because I can only help people one at a time.” Mr. Elliott showed respect for the student and built the student’s trust by not putting her down. Yet Mr. Elliott stuck to his rule about not speaking before being called on and explained why it was important. Similarly, Ms. Belson asked Harriet to define the word *diffident*. Harriet gave an incorrect definition, saying it meant “being bored.” Ms. Belson said, “Harriet, I can see how you might think the meaning is ‘bored’ because *diffident* looks a lot like *indifferent*. The word actually means ‘lacking in confidence.’”

You can build the overall quality of your communication with your students in many small ways. For example, finding the time each week to speak privately with students lets them know that you care about them as individuals. Asking older students sincere questions about their friends, out-of-school activities, or part-time jobs also conveys your interest in them. Taking the time to write positive comments on papers lets students know that you appreciate their strengths and do not focus only on their needs. When you encourage each student to achieve his or her own potential, without continually comparing students to one another, you are communicating the idea that each class member has a valuable contribution to make. Teachers who fail to take these small steps toward positive communication with students, or who publicly embarrass a student or punish a group because of the behavior of a few, soon may create a negative classroom climate that thwarts appropriate and effective learning.
Classroom Rules

What rules do you intend to establish in your classroom? Rules help create a sense of order and expectations for a classroom, and they form a significant first step in setting up a learning environment based on preventive classroom management. Teachers who are effective classroom managers have well-defined rules for their classrooms (for example, Olson & Platt, 2004; Ornstein & Lasley, 2004).

Effective classroom rules share three key characteristics: they are brief and specific, positively worded, and clearly understood by students (Alberto & Trautman, 2002; Doyle, 1990) and accommodate students from different cultures (Grossman, 1995).

First, rules should be few in number but as specific as possible. For example, a list of 10 or 12 general rules that urge students to be fair, kind, and respectful is not as useful as 3 or 5 specific rules such as “Speak one at a time,” “Keep your hands to yourself,” and “Be prepared to start class when the bell rings by having all your learning materials ready.”

Second, rules should be worded in a positive way (Arends, 2004; Olson & Platt, 2004). In some classrooms, rules sound punitive because they are too negative. Consider the difference between a rule that states, “Don’t call out answers,” and one that says, “Raise your hand to speak.” If students assist in making classroom rules, you can encourage positive wording by rephrasing any rules that students have inappropriately worded. Keep in mind that students who participate in rule making might be more motivated to obey rules.

Third, rules should be explained carefully to your students so that they are understood. Post rules during the first weeks of school, explain and discuss them, and model them for students. Violations of the rules should be pointed out and corrected immediately. For example, after you and your students have established and reviewed classroom rules, explain their use, congratulate students for following them, and ask students whom you reprimand to explain why their behavior violated the rules. Younger students could draw pictures about their classroom rules and procedures. Older students could write about the necessity for rules. This early attention to setting your classroom expectations has a yearlong payoff. By rehearsing them and focusing student attention on them, you make the rules part of students’ understanding of their classroom interactions. If you do not take this time to teach the rules, too often they become merely a bulletin board display, ignored by teachers and students alike.

Finally, you need to be sure that your rules accommodate students from different cultures. For example, rules about respecting other students’ property may be puzzling for Latino students, for whom sharing one’s belongings is a highly valued activity. Similarly, rules related to aggressive behavior may need to be enforced with care for students whose parents expect them to stand up for themselves, especially when someone says something derogatory about a student’s family (Grossman, 1995). It is important to note that taking cultural differences into account does not necessarily mean that the rules need to be changed, only that the rules may need to be more carefully explained and enforced.

Monitoring

In addition to having clear expectations, you also need to monitor student classroom behaviors frequently. For example, scan the room to check that students are following the rules. To do this, you always need to have a clear view of the entire class, regardless of the activity in which you or the class are engaged. When student behavior is not carefully monitored, students choose not to follow the rules consistently. For example, Charmaine was a student in Ms. Patrick’s fifth-grade class who had behavior problems. Ms. Patrick had a rule that students needed to complete all their independent work before they could go to the computer station to play a problem-solving game. Ms. Patrick did not have time to monitor Charmaine’s behavior. One day, she saw Charmaine at the computer station
and asked her whether she had completed her assignments. Not only had Charmaine not completed her assignments on that day, but she hadn’t done any work for the past 3 days. Thereafter, Ms. Patrick was careful to monitor the work progress of all her students.

The Use of Time

The way teachers use time in the classroom is one of the most important aspects of classroom organization. Effectively using instructional time and managing transition time constitute two particularly important tasks.

**USING INSTRUCTIONAL TIME**

The amount of time that students are meaningfully and successfully engaged in academic activities in school is referred to as **academic learning time** (Arends, 2004). Research has shown that more academic learning time in a classroom results in increased student learning (Fisher, Berliner, Filby, Marlare, Cahan, & Dishaw, 1980). Time usage is particularly important for students with special needs, who may need more time to learn than their peers.

Paine and colleagues (1983) suggest several ways in which teachers can maximize academic learning time. One way is to minimize the time spent on organizational activities such as lunch counts, opening activities, getting drinks, sharpening pencils, cleaning out desks, and going to the bathroom. For example, teach students how to perform organizational tasks efficiently and how to hold them to a firm time schedule when carrying them out. Another way is to select activities that have the greatest teaching potential and that contribute most to students’ achieving the core school curriculum. Although learning activities can be fun, they should ultimately be selected for the purpose of teaching students something important. Finally, the strategies described in this chapter and throughout this book for organizing your classroom, grouping your students, and adapting your methods and materials also help ensure the productive use of your students’ time. One specific technique to increase the academic learning time of your students is described in the Professional Edge on page 162.

**MANAGING TRANSITION TIME**

Just as important as the amount of time spent in academic activities is the management of transition time. **Transition time** is the time it takes to change from one activity to another. Transition time occurs when students remain at their seats and change from one subject to another, move from their seats to an activity in another part of the classroom, move from somewhere else in the classroom back to their seats, leave the classroom to go outside or to another part of the school building, or come back into the classroom from outside or from another part of the building (Paine et al., 1983).

Research studies show that teachers sometimes waste academic learning time by not managing transitions carefully (Ornstein, 2004). Paine and colleagues (1983, p. 85) suggest that you have rules devoted specifically to transitions and that you teach these rules directly to students. The following are among the rules they suggest:

1. Move quietly.
2. Put your books away and get what you need for the next activity. (You may need to state what that activity is and what materials students need for it.)
3. Move your chairs quietly. (In some classes with small-group instruction, students carry their desk chairs to the group for seating there.)
4. Keep your hands and feet to yourself.

As with all rules, those for transitions need to be consistently monitored and reinforced.

The way you organize classroom materials also can affect the management of transitions. For example, you need to have all materials ready for each subject and activity. In addition, materials should be organized so that they are easily accessible. No matter how well organized your transitions are, you still may need to adapt them for some
students with special needs. Students with physical disabilities may need more time to take out or put away their books. Students with physical and visual disabilities may have mobility problems that cause them to take more time with such transitional activities as getting into instructional groups or moving from room to room. Furthermore, you may need an individualized system of rewards or other consequences to guide students with attention deficit–hyperactivity disorder or behavior disorders through transition times.

**PROFESSIONAL EDGE**

Using “Sponges” to Increase Academic Learning Time

You almost always have times during the day when you have a minute or two before a scheduled academic activity or before the class goes to lunch, an assembly, or recess. You can fill that extra time with productive activities by using “sponges.” Sponges are activities that fit into brief periods of time and that give students practice or review on skills and content you have already covered in class. The following lists of sponges can help you “soak up” that extra classroom time.

**Lower-Grade Sponges**

1. Tell children to be ready to state one playground rule.
2. Tell children to be ready to list the names of children in the class that begin with J or M, and so on.
3. Tell children to be ready to draw something that is drawn only with circles.
4. Tell children to be ready to think of a good health habit.
5. Flash fingers—have children tell how many fingers you hold up.
6. Say numbers, days of the week, months—and have children tell what comes next.
7. Ask what number comes between two numbers: for example, 31–33, 45–47.
8. Ask children what number comes before or after 46, 52, 13, and so on.

9. Write a word on the board. Have children make a list of words that rhyme with it.
10. Count to 100 by 2s, 5s, 10s, and so on, either orally or in writing.
11. Think of animals that live on a farm, in the jungle, in water, and so forth.
12. Name fruits, vegetables, meats, and the like.
13. List things you can touch, things you can smell, and so on.

**Dismissal Sponges**

1. “I Spy”—ask children to find something in the room that starts with M, P, and so on.
2. Ask children to find something in the room that has the sound of short a, long a, and so forth.
3. Number rows or tables. Signal the number of the table with fingers, and allow children to leave accordingly.
4. Count in order or by 2s, 5s, and so on.
5. Say the days of the week, the months of the year.
6. Ask what day it is, what month it is, what the date is, what the year is. Ask how many months are in a year, how many days are in a week, and so on.
7. Use reward activities:
   “We have had a good day! Who helped it to be a good day for all of us? Betty, you brought flowers to brighten

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**How Can You Group All Your Students for Instruction in Inclusive Classrooms?**

Students with special needs benefit from a variety of classroom grouping arrangements, including large- and small-group instruction, mixed- and same-skill groupings, and teacher-centered or peer-mediated group instruction. Remember that the partic-
ular arrangement you choose depends on your instructional objectives as well as your students’ particular needs.

**Whole-Class or Large-Group Instruction**

Students with special needs benefit from both whole-class (or large-group) and small-group instruction. One advantage of whole-class instruction is that students spend the entire time with the teacher. In small-group instruction, students spend part of the time with the teacher and also spend time working independently while the teacher works with other small groups. Research shows that the more time students spend with the teacher, the more they learn (Rosenshine & Stevens, 1986). This increase in learning may be because students are more likely to go off task when they are working on their own, particularly when they have learning or behavior problems. Whatever grouping arrangements you use, try to make sure that students spend as much time as possible working with you.

Another advantage of whole-group instruction is that it does not single out students with special needs as being different from their peers. However, you may need to adapt whole-group instruction for students with special needs. For example, students in

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FYI

An advantage of co-teaching (see Chapter 3) is that it gives teachers more grouping options and students more time with the teacher.

FYI

Forming same-skill groupings across grade levels, sometimes referred to as the Joplin Plan, gives teachers more options for meeting the specific skill needs of students.
Mr. Nichols’s fourth-grade class was reading *Charlotte’s Web* as a large-group instructional activity. Simone read more slowly than the rest of the class. To help her keep up, Mr. Nichols provided a book on tape. He also gave Simone more time to answer comprehension questions about the story in class because it took her longer to look up some of the answers. In another example, before his lectures, a high school science teacher identified technical words he was going to use and then worked before school with a small group of students with vocabulary problems to help them learn the words.

**Small-Group Instruction**

You may encounter situations in which small-group instruction is more appropriate for students with special needs. You can use same-skill groupings, mixed-skill groupings, or one-to-one instruction in setting up your groups.

**Same-skill groupings** are helpful when some but not all students are having trouble mastering a particular skill and need more instruction and practice. For example, Ms. Rodgers was showing her students how to divide fractions that have a common denominator. She gave her class a quiz to see who had learned how to do the problems. She found that all but five students had mastered the skill. The next day, Ms. Rodgers worked with these five students while the rest of the class did an application activity.

Small-group instruction is not only for special education or remedial students; most students benefit from extra help in a small group at one time or another. In fact, many times students with special needs do not need extra instruction.

Small same-skill groups have also proven effective in basic skill areas when students are performing well below most of the class (Bursuck et al., 2004; Mosteller, Light, & Sachs, 1996). For example, Lori is in Ms. Hubbard’s fourth-grade class and is reading at the second-grade level. Lori is learning decoding and vocabulary skills in a small group with other students who read at her level. Because the group is small and homogeneous, Ms. Hubbard is able to proceed in small steps, present many examples, and allow students to master skills before they move on. Lori is making progress and feels good about herself because she is becoming a better reader.

Clearly, some students do require instruction that is more individualized and intensive than can be provided in the large group (Bursuck et al., 2004). However, small same-skill groups should be used only when attempts to adapt instruction in the large group have been unsuccessful. Same-skill groups tend to become permanent and take on a life of their own. Thus, the ultimate goal of any small group should be its eventual dissolution. Also, on many days students can benefit from instruction with the rest of the class. For example, Lori’s group participates in large-group reading when the teacher is reading a story and the class is working on listening comprehension. Another potential problem in using same-skill groupings is the danger that students in a low-achieving group in one area will be placed in low-achieving groups in other areas even though their skill levels do not justify it. For example, just because Lori is in the lowest-level reading group does not automatically mean she needs to be in low-achieving groups in other areas such as math.

The major advantage of **mixed-skill groupings** is that they provide students with special needs a range of positive models for both academic and social behavior. In mixed-skill groupings students often help each other, so such groups can also be a vehicle for providing direct instruction to individual students, something for which classroom teachers often do not have the time. In addition, mixed-skill groups, like large groups, tend not to single out students with special needs.

**One-to-One Instruction**

Providing **one-to-one instruction** for students with special needs can be very effective under some circumstances. In this grouping arrangement students work with a teacher, a paraprofessional, or a computer on well-sequenced, self-paced materials that are
Textbooks

Basal textbooks (often called basals) are books used for instruction in any subject area that contain all the key components of the curriculum being taught for that subject. The careful evaluation of basals is vital because the selection of well-designed textbooks that require few adaptations for students with special needs can save you much time and energy. For example, a math basal that contains plenty of practice activities does not need to be adapted for students who require lots of practice to master a skill. Similarly, a history textbook that highlights critical vocabulary and includes clear context cues to help students figure out the words on their own may make it unnecessary for teachers to prepare extensive vocabulary study guides.

Fortunately, over the past 20 years, guidelines for distinguishing well-designed texts have been developed (Armbruster & Anderson, 1988; Kameenui et al., 2002; King-Sears, 2001). A set of questions to help you evaluate basals and other basic skills materials is included in the Professional Edge on page 166. Carefully evaluating basals helps alert you to any adaptations you may need to make. For example, a spelling basal with little provision for review can be troublesome for students who have problems retaining information. For example, you may want to develop review activities for every three lessons rather than every five as is done in a given book.

Many teachers are choosing to develop or collect their own materials rather than depending on published basal series. For example, some teachers have their students read trade books instead of traditional reading books; others have their students engage in the actual writing process rather than, or in addition to, answering questions in a book. Still others involve their students in real-life math-problem solving rather than
use basal math books. Even if your school does not use basal math books, the guidelines discussed here for teaching basic skills apply.

*Content-area textbooks*, which are books used for instruction in subject areas such as science or social studies, also need to be evaluated. In secondary schools, students are often expected to read their textbooks to access curriculum content (Sabornie & de-

### Professional Edge

**Guidelines for Evaluating Basals and Other Basic Skills Curricula**

Before evaluating any material, read the evaluative questions and place an asterisk next to those that are critical for the type of material you are examining. Answer each question with yes or no. Examine all your responses in a single area, paying special attention to the questions you designated as critical. Rate each area inadequate (1), adequate (2), or excellent (3). If the area is inadequate, designate whether the features can be easily modified (M).

<table>
<thead>
<tr>
<th>Rating Scale:</th>
<th>Inadequate</th>
<th>Adequate</th>
<th>Excellent</th>
<th>Easily modified</th>
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<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>M</td>
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#### Effectiveness of Material

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Is information provided that indicates successful field testing or class testing of the material?</td>
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<tr>
<td>Has the material been successfully field-tested with students similar to the target population?</td>
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<tr>
<td>Are testimonials and publisher claims clearly differentiated from research findings?</td>
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#### Prerequisite Skills

<table>
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<tr>
<th>Yes</th>
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<tr>
<td>Are the prerequisite student skills and abilities needed to work with ease in the material specified?</td>
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<tr>
<td>Are the prerequisite student skills and abilities compatible with the objectives of the material?</td>
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<tr>
<td>Are the prerequisite student skills and abilities compatible with the target population?</td>
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</table>

#### Content

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<tr>
<th>Yes</th>
<th>No</th>
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<tr>
<td>Are students provided with specific strategies rather than a series of skills in isolation?</td>
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<tr>
<td>Does the selection of subject matter, facts, and skills adequately represent the content area?</td>
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<tr>
<td>Is the content consistent with the stated objectives?</td>
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<tr>
<td>Is the information presented in the material accurate?</td>
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<tr>
<td>Is the information presented in the material current?</td>
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<tr>
<td>Are various points of view, including treatment of cultural diversity, individuals with disabilities, ideologies, social values, gender roles, and socioeconomic status, represented objectively?</td>
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<tr>
<td>Are the content and the topic of the material relevant to the needs of students with disabilities?</td>
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#### Sequence of Instruction

<table>
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<th>Yes</th>
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<tr>
<td>Is the scope and sequence of the material clearly specified?</td>
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<tr>
<td>Are facts, concepts, and skills ordered logically?</td>
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<tr>
<td>Does the sequence of instruction proceed from simple to complex?</td>
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<tr>
<td>Does the sequence proceed in small, easily attainable steps?</td>
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#### Behavioral Objectives

<table>
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<tr>
<th>Yes</th>
<th>No</th>
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<tr>
<td>Are objectives or outcomes for the material clearly stated?</td>
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<tr>
<td>Are the objectives or outcomes consistent with the goals for the target population?</td>
<td></td>
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<tr>
<td>Are the objectives or outcomes stated in behavioral terms, including the desired behavior, the conditions for measurement of the behavior, and the desired standard of performance?</td>
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Bettencourt, 2004; Mercer & Pullen, 2005). Because students are required to read and understand their texts, often without previous instruction, the texts should be written at a level at which students can easily understand them. Armbruster and Anderson (1988) refer to readable textbooks as “considerate.” Considerate textbooks are easier for students to use independently and require fewer teacher adaptations. The following

<table>
<thead>
<tr>
<th>Rating Scale:</th>
<th>Inadequate</th>
<th>Adequate</th>
<th>Excellent</th>
<th>Easily modified</th>
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<td>1 2 3 M</td>
<td>I</td>
<td>A</td>
<td>E</td>
<td>M</td>
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**Initial Assessment and Placement**
- Yes No  Does the material provide a method to determine initial student placement in the curriculum?
- Yes No  Does the initial assessment for placement contain enough items to place the learner accurately?

**Ongoing Assessment and Evaluation**
- Yes No  Does the material provide evaluation procedures for measuring progress and mastery of objectives?
- Yes No  Are there enough evaluative items to measure learner progress accurately?
- Yes No  Are procedures and/or materials for ongoing record keeping provided?

**Instructional Input (Teaching Procedures)**
- Yes No  Are instructional procedures for each lesson either clearly specified or self-evident?
- Yes No  Does the instruction provide for active student involvement and responses?
- Yes No  Are the lessons adaptable to small-group and individualized instruction?
- Yes No  Are a variety of cueing and prompting techniques used to gain correct student responses?
- Yes No  When using verbal instruction, does the instruction proceed clearly and logically?
- Yes No  Does the material use teacher modeling and demonstration when appropriate to the skills being taught?
- Yes No  Does the material specify correction and feedback procedures for use during instruction?

**Practice and Review**
- Yes No  Does the material contain appropriate practice activities that contribute to mastery of the skills and concepts?
- Yes No  Do practice activities relate directly to the desired outcome behaviors?
- Yes No  Does the material provide enough practice for students with learning problems?
- Yes No  Are skills systematically and cumulatively reviewed throughout the curriculum?

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**FROM THE RESEARCH**
Guidelines such as those shown here have been confirmed in numerous reviews of effective teaching practices (Forness, Kavale, Blum, & Lloyd, 1997; Kameenui et al., 2002). Overall, programs that employed many of these features have shown large gains for both general and special education students, in both elementary and secondary classes. These gains occur in a variety of subject areas, when measured using norm-referenced or criterion-referenced measures, and last up to one year or more.

guidelines refer to aspects of considerate textbooks involving content, organization, and quality of writing.

**CHECK THE CONTENT COVERED IN THE TEXT TO SEE WHETHER IT STRESSES “BIG IDEAS” RATHER THAN FACTS IN ISOLATION**

- Big ideas are important principles that enable learners to understand the connections among facts and concepts they learn (Kameenui et al., 2002). For example, in a text that stressed facts in isolation, students learned that Rosa Parks was an important figure because she led the Montgomery bus boycott in 1955. In a text that stressed big ideas, students learned that the bus boycott, led by Rosa Parks in 1955, was carried out in response to the problem of segregation in the South in the early 1950s and that the boycott was the first in a series of civil rights protests eventually leading to the Civil Rights Act of 1965.

**CHECK TO SEE WHETHER SUPPORT IS PROVIDED FOR STUDENT COMPREHENSION**

- Support for student comprehension can be detected in the following three ways:

1. **Check the organization of the headings and subheadings.** Make an outline of the headings and subheadings in a few chapters. How reasonable is the structure revealed? Is it consistent with your knowledge of the subject matter?

2. **Check the consistency of organization in discussions of similar topics.** For example, in a science chapter on vertebrates, information about the different groups of vertebrates should be similarly organized; that is, if the section on amphibians discusses structure, body covering, subgroups, and reproduction, the section on reptiles should discuss the same topics, in the same order.

3. **Look for clear signaling of the structure.** A well-designed text includes information headings and subheadings. The most helpful headings are those that are the most specific about the content in the upcoming section. For example, the heading “Chemical Weathering” is a more helpful content clue than the heading “Another Kind of Weathering.” A well-signed text also includes format clues to organization. Page layouts, paragraphing, marginal notations, graphic aids, and the use of boldface, italics, and/or underlining can all serve to highlight or reinforce the structure. For example, a discussion of the four stages in the life cycle of butterflies could be signaled by using a separate, numbered paragraph for each stage (that is, 1. Egg; 2. Larva; 3. Pupa; 4. Adult) and by including a picture for each stage. Finally, look for signal words and phrases that designate particular patterns of organization. For example, the phrases **in contrast** and **on the other hand** signal a compare-and-contrast organization, whereas the words **first, second, and third** indicate an enumeration or list pattern.

**CHECK TO SEE THAT IMPORTANT BACKGROUND KNOWLEDGE IS ACTIVATED**

- Despite the importance of background knowledge for comprehension (Beck & McKeown, 2002), many textbooks assume unrealistic levels of students’ background knowledge (Gersten, Fuchs, Williams, & Baker, 2001). A failure to activate important background knowledge may be especially problematic for students with special needs, who are more likely to lack this information (Hallahan et al., 2005; Lerner, 2003). A number of textbook features indicate adequate attention to background knowledge. For example, social studies texts often activate background knowledge by providing definitions for important vocabulary content, displaying geographical information on maps, and featuring timelines delineating when key events took place (Kameenui et al., 2002).

**CHECK FOR QUALITY OF WRITING**

- The quality and clarity of writing can also affect student comprehension. Quality of writing can be evaluated in five ways.

1. **Look for explicit or obvious connectives, or conjunctions.** The absence of connectives can be particularly troublesome when the connective is a causal one (for ex-
ample, *because, since, therefore*), which is frequently the case in content-area textbooks. Therefore, look especially for causal connectives. For example, the sentence *Because the guard cells relax, the openings close* is a better explanation than the sentences *The guard cells relax. The openings close.*

2. **Check for clear references.** Another problem to watch for is confusing pronoun references when more than one noun is used. For example, consider the following: *Both the stem of the plant and the leaf produce chloroform, but in different ways. For one, the sun hits it, and then . . .* Here, the pronouns *one* and *it* could be referring to either the stem or the leaf. Also, look out for vague quantifiers, those that do not modify the noun being quantified (for example, *some, many, few*). For example, the sentence *Some whales have become extinct is clearer than Some have become extinct.* In addition, check for definite pronouns without a clear referent (for example, *She saw him, where the identity of him is not specified.*

3. **Look for transition statements.** Transitions help the reader move easily from idea to idea. Given that a text covers many topics, make sure that the topic shifts are smooth. For example, in a biology chapter on the respiratory system, the text signals the transition from naming the parts of the respiratory system to describing the actual respiratory process by stating, *Next, the role each of these parts of the body plays in the respiratory process will be described.*

4. **Make sure the chronological sequences are easy to follow.** In a discussion of a sequence of events, the order of presentation in the text should generally proceed from first to last; any alteration of the order could cause confusion if not clearly signaled.

5. **Make sure graphic aids are clearly related to the text.** Graphic aids should contribute to understanding the material rather than simply provide decoration or fill space; should be easy to read and interpret; and should be clearly titled and labeled, and referenced in the text so the reader knows when to look at them.

### Manipulatives and Models

Manipulatives and models can help students make connections between the abstractions often presented in school and the real-life products and situations these abstractions represent. **Manipulatives** are concrete objects or representational items, such as blocks and counters (for example, base-10 blocks for math), used as part of instruction. **Models** are also tangible objects; they provide a physical representation of an abstraction (for example, a scale model of the solar system). Strategies to help students make these connections have great potential benefit for students with special needs, who may lack the background knowledge and reasoning skills to understand abstractions (Cass, Cates, Smith, & Jackson, 2003; Smith, 2004). Still, manipulatives and models should be used carefully, because their use with students with special needs has not been heavily researched (Stein, Silbert, & Carnine, 1997; Cass et al., 2003). When using these tools, consider the following seven guidelines (Marzola, 1987; Ross & Kurtz, 1993).

1. **Select materials that suit the concept and the developmental stage of the students.** When you are first introducing a concept, materials should be easy to comprehend. Generally, the order in which you introduce materials should follow the same order as students’ understanding: from the concrete to the pictorial to the abstract. However, not all students need to start at the same level. For example, in a biology lesson on the heart, many students benefit from viewing a three-dimensional model of a human heart, whereas other students are able to understand how a heart works just by seeing a picture of one.

2. **Use a variety of materials.** Students with special needs may have trouble transferring their understanding of a concept from one form to another. For example, Curtis’s teacher always demonstrated place value using base-10 blocks. When Curtis was given...
5. Elicit student explanations of their manipulations or use of models. Encourage your students to verbalize what they are doing as they work with models and manipulatives. This is a good way for you to assess whether they really understand the concept or skill. For example, Ms. Conway had her students name the main parts of the human heart using a model. Mr. Abeles had his students explain out loud how they would subtract 43 from 52 using base-10 blocks. Although explanations can help you evaluate how your students process information, students with special needs may not be able to articulate concepts right away because of language problems or a lack of reasoning skills. These students may require frequent demonstrations of how to articulate what they are doing.

6. Present clear guidelines for handling manipulatives to prevent management problems. Although manipulatives can be helpful instructional tools, they also can create management problems, particularly in larger groups when your physical access to students is limited. For example, Ms. Leifheit wanted her students to manipulate a place-value problem using coffee stirrers, but he was unable to do it. Curtis’s teacher could have prevented this problem in the first place by demonstrating place value using a range of manipulative materials, such as coffee stirrers, paper clips, and so on.

3. Use verbal explanations whenever possible to accompany object manipulation. Models and manipulative demonstrations should be preceded and accompanied by verbal explanations of the concept or skill being demonstrated. Verbal explanations are valuable because students may not be able to identify the important features of the model on their own. For example, Ms. Balou put a model of a two-digit-by-two-digit multiplication problem on the board. She verbally explained to her students all the steps in computing the problem and wrote each step on the chalkboard as it was completed.

4. Encourage active interaction. It is not enough just to have the teacher demonstrate with manipulatives or models as students observe. Allow your students to interact actively with models and manipulatives. Hands-on experience helps them construct their own meaning from the materials.

7. Move your students beyond the concrete level when they are ready. Some students with special needs may have trouble moving from one learning stage to another. One effective way to help students make the transition from the concrete to the abstract is to pair concrete tasks with paper-and-pencil tasks. For example, Ms. Conway had her students label a picture of a human heart after they had observed and discussed a physical model. Mr. Abeles had his second graders solve subtraction problems using manipulatives and then record their answers on a traditional worksheet. However, Marsh and Cooke (1996) found that students with learning disabilities who were taught to solve story problems using manipulatives were able to solve similar problems at an abstract level without having to go through the representational stage.

Technology

Teachers today have available to them a broad array of technology to enhance the presentation of material to their students. As mentioned in Chapter 1, technologies range from low- to high-tech options. One common use of computers in inclusive classrooms
is to provide instruction to students through drill-and-practice programs, tutorials, and simulations. In general, drill-and-practice programs are used most often with students with special needs. Drill-and-practice programs have been shown to be effective for students with special needs largely because they allow students to learn in small steps, provide systematic feedback, and allow for lots of practice to mastery. Still, not all drill-and-practice programs are created equal (Arends, 2004; Okolo, 1993). Some guidelines for what to look for and what to avoid in these programs are given in the Professional Edge on page 172.

Computers can also provide initial, sequenced instruction for students, using tutorials in problem solving, decision making, and risk taking, and using simulations. Each of these forms of computer-assisted instruction has potential advantages and disadvantages (Roblyer, Edwards, & Havriluk, 2004). For example, tutorials can present instruction to mastery in small, sequential steps, an instructional approach shown to be effective with students with special needs. Tutorials can also provide one-to-one instruction at varying levels of difficulty, something teachers usually do not have time to do. Still, you need to check to be sure that students have the necessary prerequisite skills to benefit from the tutorials. In addition, tutorials may not provide sufficient review for students, and students may not be motivated enough to work through them independently (Roblyer et al., 2004). Simulations are of great potential benefit in teaching students to be active learners by confronting real-life situations. However, simulations may be difficult to integrate with academic curriculum, may require much teacher assistance, and can be time-consuming (Roblyer et al., 2004).

Assistive technology (AT) is an important part of an inclusive classroom. An assistive-technology device is any piece of equipment that is used to increase, maintain, or improve the functional capabilities of a child with a disability. An assistive-technology service is any service that directly assists a child in the selection, acquisition, or use of an assistive-technology device, according to the Technology-Related Assistance for Individuals with Disabilities Act of 1998. A range of high- to low-tech AT is available to enable students with disabilities to communicate or to access information by allowing them to bypass their disability. Students with physical disabilities such as Josh from the chapter-opening vignette can operate computers with a single key or switch rather than through a regular keyboard. Students with physical disabilities can use voice-command systems to enter information into a computer verbally. Students with deafness can communicate with hearing students or other deaf students using computer-assisted telecommunication devices such as those described in Chapter 6. Computer-generated large print, braille translations, and synthesized speech can assist students with visual disabilities in communicating. Students with communication problems can benefit from augmentative communication devices, which are computers equipped with speech synthesizers that can type text and produce speech heard by everyone. These devices can also be programmed with words and phrases for particular situations. Students with learning disabilities can compensate for poor handwriting, spelling, and grammatical skills using word-processing equipment. Ways to use INCLUDE to determine the AT needs of students with disabilities are described in the Technology Notes on pages 176–177.

How Can You Analyze Instructional Methods in Relation to Student Needs?

Teachers use a number of instructional methods in class, including direct instruction, indirect methods of instruction, scaffolding, independent student practice, and evaluation of student performance. Each of these methods should be analyzed in relation to student needs and then used and/or adapted as needed.
The introduction of technology in the classroom has given teachers a new array of tools to use in presenting material to students. Students with special needs can especially benefit from using drill-and-practice software, which allows them to learn at their own pace. Keep in mind the following guidelines when choosing an effective drill-and-practice program for your students who have special needs.

**Features of Effective Drill-and-Practice Software**

<table>
<thead>
<tr>
<th>What to Look For</th>
<th>What to Avoid</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programs that provide high rates of responding relevant to the skill being learned</td>
<td>Programs that take too much time to load and run or that contain too many activities unrelated to the skill being learned</td>
<td>The more time students spend on task, the more they learn.</td>
</tr>
<tr>
<td>Programs in which animation and graphics support the skill or concept being practiced</td>
<td>Programs with animation or graphics that are unrelated to the program’s instructional objective</td>
<td>Although animation and graphics may facilitate student interest in an activity, they may also distract students, interfere with skill mastery, and reduce practice time.</td>
</tr>
<tr>
<td>Programs in which reinforcement is clearly related to task completion or mastery</td>
<td>Programs in which the events that occur when students are incorrect (for example, an explosion) are more reinforcing than the events that occur when the student is correct (for example, a smiling face)</td>
<td>Some programs may inadvertently encourage students to practice the incorrect response to view an event they find more interesting.</td>
</tr>
<tr>
<td>Programs in which feedback helps students locate and correct their mistakes</td>
<td>Programs in which students are told merely whether they are right or wrong or instructed to try again</td>
<td>Without feedback that informs them of the correct answer after a reasonable number of attempts, students may become frustrated and make random guesses.</td>
</tr>
<tr>
<td>Programs that store information about student performance or progress that can be accessed later by the teacher</td>
<td>Programs without record-keeping features</td>
<td>Students may encounter difficulties with the skills covered by a program that requires teacher intervention. However, teachers often find it difficult to monitor students as they work at the computer. Access to records of student performance enables the teacher to determine whether a program is benefiting a student and whether the student needs additional assistance.</td>
</tr>
<tr>
<td>Programs with options for controlling features such as speed of problem presentation, type of feedback, problem difficulty, and number of practice trials</td>
<td>Programs that must be used in the same way with every student</td>
<td>Options are cost-effective; they enable the same program to be used with a broad range of students. Furthermore, they permit a teacher to provide more appropriate individualized instruction.</td>
</tr>
</tbody>
</table>

**FROM THE RESEARCH**

Sands and Buchholz (1997) report numerous studies showing the effective use of well-designed drill-and-practice software to teach reading to persons with severe reading disabilities, such as dyslexia. These students benefit from repeated activities that are multisensory (visual, auditory, motoric) in nature.

Elements of Direct Instruction

Several decades of research in teaching effectiveness have shown that many students learn skills and subject matter more readily when it is presented explicitly in what is often referred to as direct instruction (Marchand-Martella, Slocum, & Martella, 2004; Rosenshine & Stevens, 1986; Stronge, 2002). Direct instruction consists of six key elements.

1. **Review and check the previous day’s work (and reteach if necessary).** This aspect of direct instruction may include establishing routines for checking homework and reviewing relevant past learning and prerequisite skills. These procedures are important because students with special needs might not retain past learning and/or know how to apply it to new material. For example, on Thursday Ms. Guzik taught her students how to round to the nearest whole number. On Friday she gave her class a story problem to solve that required rounding. Before the students solved the problem, she pointed to a chart in the front of the room that displayed a model of how to round numbers and suggested that they refer to this chart as they solved the problem.

2. **Present new content or skills.** When content or skills are presented, teachers begin the lesson with a short statement of the objectives and a brief overview of what they are going to present and why. Material is presented in small steps, using careful demonstrations that incorporate illustrations and concrete examples to highlight key points. Included within the demonstrations are periodic questions to check for understanding.

3. **Provide guided student practice (and check for understanding).** At first, student practice takes place under the direct guidance of the teacher, who frequently questions all students on material directly related to the new content or skill. You can involve all students in questioning by using unison oral responses or by having students answer questions by holding up answer cards, raising their hands when they think an answer is correct, or holding up a number to show which answer they think is right. For example, when asking a yes-or-no question, tell your students to hold up a 1 when they think the answer is yes and a 2 when they think the answer is no. This approach can be used with spelling, too. Have your students spell words on an index card and then hold up their answers. Unison responses not only give students more practice but also allow you to monitor student learning more readily. Prompts and additional explanations or demonstrations are provided during guided practice when appropriate. Effective guided practice continues until students meet the lesson objective. For example, Mr. Hayes was teaching his students how to add $\alpha$ to words that end in $\varepsilon$. After modeling two examples at the board, he did several more examples with the students, guiding them as they applied the rule to change the $\varepsilon$ to $i$ before they added $\alpha$. Next, Mr. Hayes had students do a word on their own. Students wrote their answers on an index card and held up the card when directed by Mr. Hayes. Mr. Hayes noticed that five students did not apply the rule correctly. He called these students up to his desk for additional instruction and had the rest of the students work independently, adding $\varepsilon$ to a list of words on a worksheet.

4. **Provide feedback and correction (and reteach when necessary).** When students answer quickly and confidently, the teacher asks another question or provides a short acknowledgment of correctness (for example, “That’s right”). Hesitant but correct responses might be followed by process feedback (for example, “Yes, Yolanda, that’s right because . . .”). When students respond incorrectly, the teacher uses corrections to draw out an improved student response. Corrections can include sustaining feedback (that is, simplifying the question, giving clues), explaining or reviewing steps, giving process feedback (“The reason we need to regroup in this subtraction problem is that the top number is smaller than the bottom number”), or reteaching last steps.

Research shows that students are usually more attentive to varied, fast-paced presentations than to other kinds (Darch & Gersten, 1985). The key to providing a fast-paced presentation is to begin the directions for the next question (or for correction of the current question) immediately after the students make a response to the first question. It also helps to limit your own talk, to give your students as many opportunities to respond as possible.

FYI

Whole language represents an indirect, constructivist approach.

**Research Note**

Kroesbergen, Van Luit, and Maas (2004) compared the effects of explicit and constructivist instruction on the basic multiplication performance of two groups of students ages 8–11 who were low-achieving. The results showed that both groups of students performed better than a control group, but that the explicit instruction group outperformed the constructivist group in problem solving. The groups did not differ in their fluency and accuracy in multiplication computation. These findings show not only that systematic, explicit instruction is effective for lower level skills but that it can be used successfully to teach your students with special needs higher level problem-solving skills as well.
Using INCLUDE to Determine Assistive-Technology Needs

According to IDEA, the IEP team must consider whether a child needs assistive-technology devices and services as part of his or her plan for an appropriate education. We believe that the steps in the INCLUDE strategy can assist greatly in helping the team make this decision. What follows is a series of questions related to assistive technology (AT) that teams may want to incorporate into the INCLUDE process. These questions were adapted from ones originally suggested by Beigel (2000) and Pedrotty-Bryant, Bryant, and Raskind (1998).

Identify Classroom Demands
1. How do you present information? For example, teachers who use a lot of classroom discussions place a particular demand on children’s speaking abilities; teachers who lecture frequently place a strain on students’ writing and organizational skills.
2. What types of grouping arrangements do you use? For example, an emphasis on cooperative learning places a burden on student communication skills.
3. What types of assignments do you make? For example, a project-driven class requires students to find and organize resource materials and then present them to the class in a clear, orderly way.
4. What are the primary ways you assess and evaluate your students? For example, oral assessments can place a strain on student verbal communication skills; written assessments place demands on written language skills such as handwriting, spelling, and sentence and paragraph construction.
5. How comfortable are you with having a learner who uses AT in the classroom? Your role in this process is very important. Without your support for learning to use AT and then continuing its use, a student may abandon his or her device.
6. What is the physical structure of your classroom and school? Issues such as whether there are adequate electrical outlets or tables large enough to accommodate a computer and various peripherals need to be considered.

Note Learner Strengths and Needs and Check for Potential Success and Problem Areas
1. What purposeful motoric movement does the student have? A purposeful movement is one that the learner controls in a conscious, consistent manner (Beigel, 2000, p. 240). Examples of purposeful motoric movement include raising an eyebrow, moving the fingers of one hand in a motion similar to that of typing, and using a pen or pencil to write or draw.
2. How willing is the student to try new activities or tasks? Using AT requires a willingness to change on the part of the student. Your knowledge of the student in this area can help determine the nature of the equipment selected (for example, easy to use or hard to use) as well as the amount of time needed to achieve independent usage.
3. What does the student desire from the use of AT? The personal goals of the learner can greatly influence AT usage. Relevance of the material is an important factor in learning to perform any skill. For example, Tamra had an expressed desire to write poetry and was quite receptive to learning to use a laptop with a large keyboard especially designed for her.
4. What emotional and psychological supports does the student need when learning to use the device? Some students may require considerable emotional and psychological support as they learn to use an AT device. You or other staff working with the student should provide such support when it is needed, or students are not likely to use the device. It is important to remember that students cannot be forced to use AT; they can only be encouraged and supported whenever using the device.
5. What level of training do the student and others who interact with the student need? You, the student, and other staff working with the student need to be given the opportunity to see how the various devices work and to see who needs training and in what areas.
6. What impact, if any, do the student’s socioeconomic status and cultural background have on the use of AT? Students who live in poverty, as well as their parents, are less likely to have previous experience with technology and may need more extensive training. There is also the question of the impact of culture on the acceptance of AT by students and their families.

Brainstorm and Then Decide on Adaptations
You need to consider the features of the technical devices as well as the extent to which they help students meet identified IEP goals.
1. How durable is the device? All devices that are used in schools should be able to withstand minimal bumps and jars common in schools.

2. What setup and maintenance issues must be addressed? How easy is the device to update and repair? Do compatibility issues with other technology already in the classroom exist that must be addressed? Devices that are difficult to maintain, take a long time to repair, are not easily upgraded, or are incompatible with other technology should be avoided, because eventually they are abandoned.

3. How willing is the vendor of the device to provide a trial or loaner period of use for the student? You often need to try several devices in the school environment before a final AT decision can be made.

4. What is the reputation of the company in terms of construction, service, training, and reliability? These questions can be answered by consulting publications that deal with AT (Team Rehab, TAM Connector), contacting organizations (Council for Exceptional Children, Center for Applied Special Technology), and asking others who use AT. A number of websites that also may be helpful are listed at the end of this feature.

5. Does the student have the psychomotor skills needed to use the device in a functional manner? This question should be answered during student assessment. Many devices can be adapted for students with limited motoric control; if this device is not, then it is unrealistic to expect that the device will be used.

6. Is the device aesthetically acceptable to the student? Some students may prefer a certain color or type of mouse; others may prefer a brightly colored exterior as opposed to the typical colors of blue, black, and beige; still others may want to decorate their equipment (as long as this doesn’t interfere with its function). If students’ aesthetic needs are not addressed, they may feel the device doesn’t fit into their social milieu and are not likely to use it.

7. Does the device meet the student’s needs in a way that is easily understood by others? Students should be able to use their devices without causing a distraction. In addition, the device should not be so complex that only the vendor is able to program the device or explain how it can be used.

8. How portable is the device? For AT to be useful, the student or support person must be able to move the device from one class to another—from an elementary classroom to a special class such as art or physical education or between various academic classes in a middle or high school environment.

Evaluate Student Progress

The ultimate goal of AT is to enable students to more readily meet their IEP goals. Pedrotty-Bryant, Bryant, and Raskind (1998, p. 55) suggest that teachers ask the following questions when determining whether the assistive technology selected is an appropriate match for the student.

To what extent does the AT assist the student in compensating for the disability?

To what degree does the technology promote student independence?

What is the student’s opinion of the technology adaptation?

What is the family’s opinion of the AT?

Is the AT efficient and easy for the student to use?

Does the device promote meeting IEP goals and objectives in the least restrictive environment?

For additional information on assistive technology, consult the following websites.

ABLEDATA
http://www.abledata.com

The Alliance for Technology Access
http://www.atan.org

Apple Disability Resources
http://www.apple.com/accessibility

Closing the Gap
http://www.closingthegap.com

DREAMMS for Kids
http://www.dreamms.org

Microsoft Accessibility
http://www.microsoft.com/enable
5. **Provide independent student practice.** Students practice independently on tasks directly related to the skills taught until they achieve a high correct rate. Practice activities are actively supervised and students are held accountable for their work.

6. **Review frequently.** Systematic review of previously learned material is provided, including the incorporation of review into homework and tests. Material missed in homework or tests is retaught (Rosenshine & Stevens, 1986).

It is important to note that for older students or for those who have more subject-matter knowledge or skills, these six steps can be modified, such as by presenting more material at one time or spending less time on guided practice. For example, when a second-grade teacher presented a unit on nutrition, she spent a whole week defining and showing examples of complex carbohydrates, fats, sugar, and protein. In an eighth-grade health class, this material was covered in one day, largely because students already had much background information on this topic. Moreover, each of the direct instruction steps is not required for every lesson you teach, although they are particularly helpful to students with learning and behavior problems, who have been shown to benefit greatly from a high level of classroom structure (Hallahan et al., 2005; Mercer & Pullen, 2005; Swanson & Deshler, 2003). The Case in Practice on page 177 presents an example of a direct instruction lesson.

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**Indirect Methods of Instruction**

Indirect instruction is based on the belief that children are naturally active learners and that given the appropriate instructional environment, they actively construct knowledge and solve problems in developmentally appropriate ways (Knight, 2002). This type of teaching is often referred to as constructivist because of the belief that students are capable of constructing meaning on their own, in most cases without explicit instruction from the teacher (Knight, 2002; Hallahan et al., 2005). Indirect instruction is used by classroom teachers for both basic skills and content areas.

A common indirect method is called inquiry learning, or discovery learning (Maroney, Finson, Beaver, & Jensen, 2003; National Research Council, 1996; Jarolimek, Foster, & Kellough, 2004). Unlike direct instruction, which is very teacher-centered, in the inquiry approach the teacher’s role is that of a facilitator who guides learners’ inquiry by helping them identify questions and problems (Jarolimek et al., 2004; Knight, 2002). The learners, therefore, are placed in situations that require considerable initiative and background knowledge in finding things out for themselves. In this way students are actively involved in their own learning (Jarolimek et al., 2004).

You can see these elements of inquiry learning in a social studies lesson on Inuit or native Alaskan people developed by Lindquist (1995). The goal of the lesson was for students to “realize that there are many different groups of Inuit people, each having unique customs and traditions, but whose culture has been shaped by the Far North” (Lindquist, 1995, p. 54). First, the teacher gave the students 5 minutes to list everything they knew about the Inuit people. The teacher then had some students share their lists with the class. Student sharing of their background knowledge was followed by a short film on the Inuit people. After the film, the students were asked to cross out anything on their lists that the film caused them to change their minds about. When the children had revised their lists, the teacher divided the class into pairs; each pair was asked to research a different Inuit tribe. They were to gather information about food, shelter, clothing, and language. Each pair of students recorded information about their
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particular tribe on a data sheet and reported their information to the class. As each

Maroney and colleagues (2003) recently compiled a list of skills required for suc-

As you can see in the table, the sheer number of skills listed is daunting when ap-

Scaffolding

Scaffolding is an approach that has been used successfully to support students as they
develop problem-solving skills (Dickson, Chard, & Simmons, 1993; Larkin, 2001).
Scaffolds are “forms of support provided by the teacher (or another student) to help students bridge the gap between their current abilities and the intended goal” (Rosen shine & Meister, 1992, p. 26).

Before using scaffolding, you need to find out whether students have the necessary background ability to learn a cognitive strategy (Rosenshine & Meister, 1992). For example, a strategy for helping a student read a physics textbook is not useful if the student lacks basic knowledge of mathematics and physical properties. Similarly, teaching
a strategy for solving math word problems cannot succeed if the student does not have basic math computation skills. Using scaffolding to teach higher order cognitive strategies consists of six stages:

1. **Present the new cognitive strategy.** In this stage, the teacher introduces the strategy concretely, using a list of strategy steps. The teacher then models the strategy, including all “thinking” and “doing” steps. For example, Mr. Bridges is teaching his history class how geographic features and natural resources affect the growth and location of cities. First, he introduces the problem-solving strategy to his students: (a) define the problem, (b) propose hypotheses to explain the problem, (c) collect data to evaluate your hypotheses, (d) evaluate the evidence, and (e) make a conclusion. These steps are posted on the chalkboard for easy reference. Mr. Bridges then models the strategy by showing students a map of the state of Illinois and thinking out loud as he applies the steps. For example, he explains how he would sort through many pieces of information in determining which factors led to the development of Chicago (for example, being on Lake Michigan) and which did not (for example, cold climate).

2. **Regulate difficulty during guided practice.** At this stage, students begin practicing the new strategy using simplified materials so they can concentrate on learning the strategy. First, the strategy is introduced one step at a time. Students are guided carefully through the steps, with the teacher anticipating particularly difficult steps and completing these difficult parts of the task as necessary. Before tackling difficult problems, such as the geography of Chicago, Mr. Bridges has his students use the problem-solving steps to solve simpler problems on topics familiar to them. For example, he has them solve problems such as why the cookies someone made were dry, why a hypothetical student is late for school every day, or why the school lunches taste awful. He also helps students brainstorm ideas for how to collect data, a step that can be difficult. Mr. Bridges does this by compiling an initial list of data collection procedures for each problem. For the problem of why the cookies were dry, Mr. Bridges gives his students a list of possible data collection procedures, such as identifying the ingredients, finding out how long the cookies were baked, and figuring out how old the cookies were.

3. **Provide varying contexts for student practice.** Students practice the strategy on actual classroom tasks under the teacher’s direction. The teacher starts out leading the practice, but the students eventually carry out the practice sessions in small
cooperative groups. In Mr. Bridges’s class, students practice the problem-solving strategy using examples from their history textbooks.

4. **Provide feedback.** The teacher provides corrective feedback to students using evaluative checklists based on models of expert problem solving carefully explained to the students. Students are encouraged to evaluate their performance using these checklists. For example, each time Mr. Bridges’s students use the problem-solving strategy, they evaluate their performance by asking themselves questions such as, Did we clearly state the problem? Did we state a complete list of hypotheses? How thorough were our data collection procedures? Were we able to evaluate all the hypotheses using the information collected? Did we interpret the results accurately? Were our conclusions consistent with our results?

5. **Increase student responsibility.** Next, the teacher begins to require students to practice putting all the steps together on their own. Student independence is encouraged by removing elements of the scaffold. For example, prompts and models are diminished, the complexity and difficulty of the materials are increased, and peer support is decreased. The teacher checks for student mastery before going to the last step, independent practice.

6. **Provide independent practice.** Finally, the teacher provides the students with extensive practice and helps them apply what they have learned to new situations. For example, Mr. Bridges shows his students how problem solving can be used in other subjects, such as science.

**Independent Student Practice**

The major purpose of practice is to help students refine or strengthen their skills in various areas. Consider the following seven guidelines for using practice activities effectively in your classroom:

1. **Students should practice only skills or content they have already learned.** This guideline is particularly important in order for students to be able to perform practice activities independently. Tasks that are too difficult can lead to high levels of off-task behavior.

2. **Practice is more effective when students have a desire to learn what they are practicing.** Whenever possible, point out to students situations in which they can use the skill in other phases of learning. For example, you may explain to your students that if they learn to read more quickly, they will be able to finish their homework in less time.

3. **Practice should be individualized.** Exercises should be organized so that each student can work independently.

4. **Practice should be specific and systematic.** Practice should be directly related to skills and objectives you are working on in class. This guideline is particularly important for students with special needs, who require more practice to master academic skills.

5. **Students should have much practice on a few skills rather than little practice on many skills.** Focusing on one or two skills at a time is less confusing and gives students more practice on each skill.

6. **Practice should be organized so that students achieve high levels of success.** Correct answers reinforce students and encourage them to do more. Most students
need at least 90 percent accuracy when doing practice activities, though higher-achieving students can tolerate a 70 percent rate as long as the teacher is present to assist them (Good & Brophy, 1986).

7. **Practice should be organized so that students and teacher have immediate feedback.** You need to know how students are progressing so you can decide whether to move to the next skill. Students need to know how they are doing so they can make meaningful corrections to their work (Ornstein & Lasley, 2004).

For students with special needs, consider these additional questions: What are the response demands of the activity? Do students have to answer orally or in writing? How extensive a response is required? Do the students have enough time to finish the activity? Response demands are important because students who are unable to meet them will not be able to do the practice activity independently. For example, Mr. Edwards is having his class practice weekly vocabulary words by orally stating their definitions. Ross stutters and is unable to answer out loud. Mr. Edwards allows Ross to submit a written list of definitions. Ms. Osborne is having her students complete short-answer questions in their history books. Clarice has a physical disability and is unable to write her answers independently. She uses an adapted classroom computer to prepare her answers. Mr. Nusbaum has asked his students to write a paragraph summarizing the reasons for the stock market crash of 1929. Maurice cannot write a coherent paragraph but can answer orally into a tape recorder. Amanda writes very slowly, so Mr. Nusbaum gives her more time to complete the activity. Ways in which direct instruction and scaffolding can be used to teach vocabulary to English-language learners are in the Special Emphasis On . . . feature on pages 182–183.

Perhaps the most common form of practice used by teachers is homework. Research shows that homework can have a positive effect on student achievement when it is properly assigned (Cooper, 1989, 2001).

Homework is often a challenge for students with special needs. For example, most teachers expect homework to be completed independently, and students must have the sensory, academic, and organizational skills to do so. A student with a severe reading disability might be unable to read a chapter in a history book and answer the questions without some form of adaptation such as a peer reader or taped text. Similarly, a student with fine motor difficulties might be unable to answer the questions unless allowed to do so orally or with an adapted word processor. In addition, you may need to provide this same student more time or to assign fewer questions. Therefore, it is important that you carefully examine your own particular homework requirements and adapt them to ensure full participation by all your students.

**Evaluation of Student Performance**

The major purpose of student evaluation is to determine the extent to which students have mastered academic skills or instructional content. Chapter 4 discussed formal and informal assessments that can be used to evaluate student progress. Student evaluations are also communicated through grades, which are determined in a number of ways, including classroom tests and assignments. Because student evaluation is so important, you need to consider how classroom tests and assignments may interact with student learning needs. Most critical is that the method of evaluation measures skill or content mastery, not a student’s disability. For example, Carson, a student who has an attention deficit, should be given tests in small segments to ensure that the tests measure his knowledge, not his attention span. Similarly, Riesa, a student with a severe learning disability in writing, needs to take an oral essay test in history if the test is to be a valid measure of her history knowledge rather than her writing disability. The type of report-card grade used as well as the system used to arrive at that grade might also need
to be adapted for some students. For example, Hal was discouraged about always getting a C in English no matter how hard he tried. His teacher decided to supplement his grade with an A for effort to encourage Hal to keep trying. Mr. Henning encouraged his students to come to class on time by giving them credit for punctuality.

**Special EMPHASIS On . . .**

**Teaching Vocabulary to English-Language Learners with Learning Disabilities**

Content-area instruction requires teaching new vocabulary words, many of which can be technical. Gersten, Baker, and Marks (1998) suggest the following research-based strategies when teaching vocabulary to your English-language learners who have learning difficulties.

**Focus Vocabulary Instruction on a Small Number of Critical Words.**

Providing extensive drill on lengthy word lists is ineffective for students with learning difficulties. Instead, focus on several critical words at a time and emphasize these for several days. Enhance understanding of vocabulary by showing how the words are used in a variety of contexts, including below-grade-level books in the same subject area, texts in different content areas, and personal writing projects.

**Provide Multiple Exposures.**

You need to expose students to the word in a variety of contexts before they begin to develop a deeper understanding of the meaning of the word and to use the word as part of their expressive vocabulary. Multiple exposures can include how the words are used in below-grade-level books in the same subject area, texts in different content areas, and personal writing projects.

**Introduce New Words before They Are Encountered in Reading.**

The introduction of vocabulary should be done explicitly during a short segment of class time, usually around 5 minutes (Echevarria, 1998). During these 5 minutes, say the vocabulary word, write it on the board, ask students to say and write it, and then define the word using pictures, demonstrations, and examples familiar to students. (See “Teaching Vocabulary through Modeling Examples, Synonyms, and Definitions” in Chapter 9.)

**Practice with New Words.**

Give your students many opportunities to practice the new words they are learning. Gersten and colleagues (1998) report an example of teaching the word *audience* in Mr. Popper’s Penguins. After teaching the definition of *audience*, the teacher discussed other kinds of audiences with the class, such as an audience at a Roots concert, an audience at a Harry Potter movie, an audience at a football game, and an audience with the pope. It is critical that English-language learners have lots of practice so they can go from a basic understanding of a word to actually being able to use the word in classroom conversation.

**SUMMARY**

Various aspects of classroom environments can affect the learning of all students, including those with special needs. Fewer individualized accommodations for students with special needs are required in classrooms that are well structured and organized. However, even in the best situations, some adaptations are needed.

The INCLUDE strategy is a decision-making process to help teachers make reasonable adaptations
Focus on Idioms.
Idioms may be hard for English-language learners to understand, because their overall meaning can be quite different from their individual parts. Still, idioms can be used effectively to focus students’ attention on important differences between standard and contextual definitions of words, as well as to increase student comprehension. For example, in a history class devoted to the rise of labor unions, a union leader was quoted as using the idiom “hit them in the pocketbook where it hurts.” The teacher explained carefully that this expression was not to be taken literally and that it simply meant the unions wanted to hurt managers by causing them to lose money.

Develop Word Banks.
A word bank is a place where key vocabulary is stored and posted for students’ reference throughout a teaching unit or beyond. Selection of words for word banks should be based on their relevance for understanding key concepts, high frequency of use, and relevance for students’ lives. For example, in a unit on the topic of the greenhouse effect, explaining what the ozone layer is would be more important than presenting the definition of fluorocarbons. Word banks can be created by groups of students or by students individually. They can also be visually displayed. For example, as a word is introduced, its meaning and key attributes can be written on chart paper and posted in the room. The displays can then become reference points for students, can help students remember definitions and relationships among words, and can provide guides for correct spelling. Word banks can also be dynamic; as students learn more about words, this new information can be added to existing definitions. For example, the class that was learning the word audience came across the term audience share in an article students read about a current television show. The class added this use of audience to its visual display.

Use Visual Organizers.
Visual organizers can help students access and understand vocabulary that they could not understand if presented only verbally. Examples of using visual organizers to teach vocabulary are described in Chapter 9.

From the Research
Carlo et al. (2004) significantly improved the depth of vocabulary knowledge, understanding of multiple meanings, and reading comprehension of the fifth-grade English-language learners who were integrated in classrooms with English-speaking students. The strategies of presenting vocabulary words in meaningful contexts, providing access to word meanings in students’ primary languages, and presenting vocabulary in multiple contexts worked well for both groups of students.

for students with special needs. Reasonable adaptations are those that maximize student success without taking a disproportionate amount of time or diminishing the education of the other students in the class. The steps in INCLUDE are as follows: identify environmental, curricular, and instructional classroom demands; note student learning strengths and needs; check for potential areas of student success; look for potential problem areas; use information gathered to brainstorm instructional adaptations; decide which adaptations to implement; and evaluate student progress.

An important part of the INCLUDE strategy is analyzing classroom demands. Demands covering four major areas should be analyzed: classroom organization, classroom grouping, instructional materials, and instructional methods. Classroom organization includes physical organization, classroom routines, classroom climate, behavior management including classroom rules and monitoring, and the use of time. Key aspects of classroom grouping involve the use of whole-class and small instructional groups, same-skill and mixed-skill groups, and one-to-one instruction. Instructional materials that need to be considered are basal textbooks, content-area textbooks, manipulatives and models, and instructional and assistive technology. With regard to teaching demands, two common instructional models used in schools are direct and indirect instruction. Sometimes students with special needs may require support in the form of scaffolds when participating in indirect teaching. Also, consider the demands of your student practice activities, and follow guidelines for using practice effectively. Finally take into account how student learning needs may interact with your classroom evaluation system including tests and grading.
Applications in Teaching Practice

Planning Adaptations in the Instructional Environment

Consider the following two scenarios:

- Verna is a student with a learning disability in Ms. Chang’s fourth-grade class. Ms. Chang uses whole-group instruction in math. This method is sometimes hard for Verna, who is behind her peers in math; Verna is slow to answer math facts, has trouble keeping numbers straight in columns, and sometimes forgets a step or two when she is computing a problem that requires several steps.

- Mr. Howard wants to teach the following textbook-reading strategy to his ninth-grade history students (Bartelt, Marchio, & Reynolds, 1994):
  
  **R** Review headings and subheadings.
  
  **E** Examine boldface words.
  
  **A** Ask, “What do I expect to learn?”
  
  **D** Do it: Read!
  
  **S** Summarize in your own words.

QUESTIONS

1. How can Ms. Chang use the INCLUDE strategy to help Verna succeed in the large group?
2. How can Ms. Chang use direct instruction to teach students to round numbers to the nearest 10? Design such a lesson.
3. How can Mr. Howard use scaffolding to teach his history students the READS strategy?
4. Find a drill-and-practice computer program for elementary or high school students and evaluate it. Does it meet the criteria discussed in this chapter?

WORKING THE STANDARDS

INTASC PRINCIPLES REFLECTED IN THIS CHAPTER:

**Principle #1** states that all teachers understand that students with disabilities may need accommodations, modifications, and/or adaptations to the general curriculum depending on their learning strengths and needs (Principle 1.03).

**Principle #4** states that all teachers understand that it is particularly important to provide multiple ways for students with disabilities to participate in learning activities (Principle 4.04).

**Principle #5** states that all teachers

- Identify the interests and preferences of students with disabilities, and use this information to design activities that encourage students with disabilities to make positive contributions to the learning community (Principle 5.01).

- Take deliberate action to promote positive social relationships among students with disabilities and their age-appropriate peers in the learning community. Thus, teachers may group students and construct learning tasks to help students with and without disabilities recognize the differential contributions that each student can make to the learning experience (Principle 5.03).

- Recognize factors and situations that are likely to promote (or diminish) intrinsic motivation, and create learning environments that encourage engagement and self-motivation of students with disabilities (Principle 5.04).
CEC STANDARDS REFLECTED IN THIS CHAPTER:

CEC Content Standard #5 states that special educators

- Foster environments in which diversity is valued and individuals are taught to live harmoniously and productively in a culturally diverse world.

- Shape environments to encourage the independence, self-motivation, self-direction, personal empowerment, and self-advocacy of individuals with exceptional learning needs.

CEC Content Standard #7 states that special educators facilitate instructional planning in a collaborative context, including the individuals with exceptionalities, families, professional colleagues, and personnel from other agencies as appropriate.

BACK TO THE CASES

The standards and principles just listed relate to the cases described at the beginning of this chapter: Mr. Rodriguez and Josh. The questions and activities that follow demonstrate how these standards and principles, along with other concepts that you have learned about in this chapter, connect to the everyday activities of all teachers.

Mr. Rodriguez

Mr. Rodriguez has provided a digital copy of the text and, a daily review of previously presented content, outlines of lectures, and small-group discussions to support Manuel’s learning of content. Step 7 of the INCLUDE strategy asks teachers to evaluate student progress. (See INTASC Principles 1.03 and 4.04.) Using information in this chapter and Chapter 4, suggest two assessment methods that Mr. Rodriguez might use to assess Manuel’s progress. Explain why you selected these two methods.

Josh

Josh’s peers may have difficulty adjusting to his speech. As a result, they may shy from interactions with him. Based on information provided in this chapter, name two ways in which Ms. Stewart can use routines, classroom organization, instructional materials, or specific teaching methods to support Josh’s interactions with peers. (See INTASC Principles 5.01 and 5.03, and CEC Standard 5.) Explain why you believe these methods would be helpful for Josh.

Visit the companion website (http://www.ablongman.com/friend4e) for a complete correlation of this chapter to the INTASC Principles and CEC Standards.

Further Readings


An invaluable resource for teachers that provides models and strategies for teaching all subject areas at all levels.


Provides an excellent overview of applications for universal design to all aspects of the classroom.


Describes a wealth of practical strategies for preventing behavioral problems through carefully planned instruction.


An indispensable guide to published direct instruction programs.