LEARNING DISABILITIES: THE INTERACTION OF STUDENTS AND THEIR ENVIRONMENTS, 5/e

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sample chapter

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CHAPTER TWELVE

Instructional Strategies: The Middle and Secondary School Years

IF INDIVIDUALIZED INSTRUCTION was difficult in elementary school, it is even more so in the middle and secondary school years. Gaps between a student's achievement and that of his or her peers often widen, and requirements are highly variable from one subject to another. Complicating matters is the fact that teenagers also are dealing with changes in their bodies, emotional needs, and social environments. Smooth passage through these years is not the norm. The school program must aim at developing strengths as well as compensations for continuing weaknesses, not merely "covering the curriculum." Provided the adolescent with LD is motivated to do so, remedial programming in reading, mathematics, written language, and survival skills can be quite successful, especially given the spurt in learning ability experienced by some teenagers. Academic tutoring is a must, as is transition planning and learning-strategy instruction. School personnel must also provide support in the important areas of speaking, thinking, and social skills development.

The secondary school program must aim at developing strengths as well as compensations for continuing weaknesses. Provided the adolescent with LD is motivated to do so, remedial programming is important.

Reading

The tremendous pressure to "cover the curriculum" in middle and high school courses may result in teachers neglecting the basic reading instruction so necessary

for students to function in life. At the secondary level, reading instruction is geared toward helping students cope with academic requirements, but it must also prepare them for everyday reading demands as adults, including postsecondary education. Students who are severely reading disabled still need to master basic decoding and comprehension strategies. Their struggle with decoding unfortunately diminishes the energy they can apply to understanding and remembering what's been read. But the situation is not hopeless at this age. Older students with severe reading disabilities can and do make gains when taught intensively, systematically, with a direct approach, "back to basics" objectives, and daily. Given their ongoing struggle, students with LD need special support in achieving positive attitudes toward reading, because the attitude with which they leave high school will tend to color their view of reading throughout their lives.

Older students with severe reading disabilities can and do make reading gains when taught intensively, systematically, with a direct approach, "back to basics" objectives, and daily.

As with anything, one of the best ways to become more proficient at reading is practice, practice, and more practice. This means engaging in independent reading—just for fun—something that students with LD rarely do. Students can learn to take more pleasure in reading, however, when taught to choose their reading materials wisely based on their comfort levels with several aspects of the text. Figure 12.1 presents a useful independent reading rubric for students to use after having read a page from the beginning of a book. If a suitable book cannot be found that is easy enough yet mature and interesting in content, *high interest-low reading level texts* have been developed to deal with this problem. These are content area books and classic works that look age-appropriate but have been rewritten at easier reading vocabulary levels and in simpler sentences, thereby providing students with materials which they can read that also convey sophisticated content. Even versions of popular magazines like *Time* and *Sports Illustrated* are available, abbreviated into short excerpts of news-breaking stories. Finally, parents need to be enlisted to encourage reading wherever and however possible in the course of negotiating the student's daily life: let the student help locate the car rental at the airport, the movies that are playing, the coupons for grocery items, upcoming rock concerts, department store sales, and so forth.

High interest–low reading level *texts are content area and classic works that are rewritten at easier reading vocabulary levels and convey sophisticated content.*

Besides continued direct and systematic reinforcement of decoding skills, reading instruction at the secondary level generally focuses on vocabulary, *fluency* (reading rate), and comprehension. These are taught in isolation, in the context of content area instruction, or both. Although some strategies developed for younger learners can be useful at the secondary level, most are too immature and require retailoring.

Vocabulary

As we know, words guide our thinking, and the ability to name and verbally rehearse what we see and hear enhances our memory. If we can help students with LD build their vocabularies and the ability to translate new information into their own words, we strengthen their capacity to communicate orally, to read, to comprehend, to recall information, and to write meaningfully.

Encouraging students to read whatever they want for a set period of time each day with no interruptions increases vocabulary, comprehension, and positive attitudes toward reading.

A technique called *sustained silent reading* (SSR) stimulates vocabulary development by encouraging students to read whatever they want for a set period of time each day without interruptions. No tests or questions are permitted. This is reading for the pure pleasure of it. We've found that this simple measure can markedly increase vocabulary, comprehension, and positive attitudes toward reading.

Independent Reading Rubric

Book/Story/Chapter/Article Title: _____

Author(s): _____

	Score			
Readability Factors	**1**	**2**	**3**	**4**
Vocabulary ☐ Score	☐ There are 10 or more words I do not know.	☐ There are 7–9 words I do not know.	☐ There are 4–6 words I do not know.	☐ There are 3 or fewer words I do not know.
Sentences ☐ Score	☐ Almost all of the sentences are long and complex.	☐ A few sentences are easy but most are long and complex.	☐ A few sentences are long and complex but most are easy.	☐ Almost all of the sentences are short and easy.
Topics and Concepts ☐ Score	☐ I am unfamiliar with the topic and most of the concepts are new to me.	☐ I know a little about the topic and concepts.	☐ I know much about the topic and concepts.	☐ I am highly familiar with the topic and none of the concepts are new to me.
Clarity of Ideas ☐ Score	☐ The ideas are presented unclearly and are difficult to understand.	☐ A few of the ideas are presented clearly enough to understand without difficulty.	☐ Most of the ideas are presented clearly enough to understand easily.	☐ The ideas are presented very clearly and are easy to understand.
Level of Abstraction (including figurative language, metaphors, similes, slang, symbols, theories) ☐ Score	☐ The author uses language and/or presents ideas that are highly abstract.	☐ The author uses many abstract words and phrases and/or presents more than one abstract idea.	☐ The author uses a few abstract words and phrases and/or presents an abstract idea.	☐ The author uses language and/or presents ideas that are concrete.
Organization ☐ Score	☐ I cannot figure out the organization.	☐ It is difficult to follow the organization.	☐ I can follow the organization but I have to concentrate.	☐ I can follow the organization easily.
Design and Format (includes font, print size, paragraph length, use of columns, use of illustrations and other visuals, and other design issues. ☐ Score	☐ The material is poorly designed and the format impedes reading.	☐ The design and format create some problems for me.	☐ The design and format create no serious problems for me.	☐ The material is well designed and the format facilitates reading.

Figure 12.1 Independent reading rubric.

Source: Schirmer, B. R., & Lockman, A. S. (2001). How do I find a book to read? Middle and high school students use a rubric for self-selecting material for independent reading. *Exceptional Children, 34,* pp. 38–39. Copyright © 2001 by The Council for Exceptional Children. Reprinted with permission

(continued)

Independent Reading Rubric (continued)

	Score			
Readability Factors	**1**	**2**	**3**	**4**
Genre ☐ Score	☐ I am not familiar with the writing form and style.	☐ I have only read this kind of writing once or twice.	☐ I have read this kind of writing a few times.	☐ I am very familiar with the writing form and style.
Interest and Motivation ☐ Score	☐ I am not interested in the topic and don't have any particular motivation or reason to read this material.	☐ I am slightly interested in the topic and would have difficulty explaining why I want to read this material.	☐ I am somewhat interested in the topic and have a couple of ideas about why I want to read this material.	☐ I am extremely interested in the topic, highly motivated, and have a definite reason to read this material.
Pacing and Fluency ☐ Score	☐ If others watched and heard me read, they would describe me as tense and my reading was choppy.	☐ If others watched and heard me read, they would describe me as uneasy and my reading as frequently hesitant.	☐ If others watched and heard me read, they would describe me as comfortable but my reading as sometimes unsure.	☐ If others watched and heard me read, they would describe me as relaxed and my reading as fluent.
☐ Total score				

Directions:
1. Read the first page of the book. If the first page is not a full page, read the next page also.
2. Check the box of the score most appropriate for each readability factor.
3. Write the score in the box under each readability factor.
4. Total the scores.
5. Determine if you can read the material independently.
   - If the total score is 30–40, the material can be read independently. If the score is 38–40, perhaps this material is too easy for you.
   - If the score is 20–29, the material is challenging. Decide which factors are most important to you. If you scored 3 or 4 on each of these factors, the material can be read independently. If you scored 1 or 2 on the most important factors, the material should be read only with assistance.
   - If the total score is < 20, the material is too difficult to read without assistance.

Figure 12.1 *Continued*

In the *language experience approach,* the student discusses an event or idea that he or she would like to write about and then dictates the composition to the teacher. The teacher encourages the student to use new vocabulary and develops a classroom environment that supports experimentation with the new words and ideas. The student then transcribes the piece, which can be used for further instruction in comprehension, written organization, sentence structure, and so forth.

Teachers must help students use new vocabulary in a variety of contexts to understand their connotations and extended meanings.

Teachers need to plan for new vocabulary to be used in as rich a variety of meaningful contexts as possible in order to help the student understand the various connotations and extended meanings of words. Interactive techniques based on schema theory, like those in Figures 12.2, 12.3, and 12.4, are more helpful than

Relationship Chart for the Chapter on Fossils

Key
+ = positive relationship
− = negative relationship
0 = no relationship
? = uncertain

	Important Ideas						
	Type of life		Location			Extinct?	
Important Words	*Plant*	*Animal*	*Sea*	*Land*	*Lakes*	*Extinct*	*Not extinct*
Trilobites							
Crinoids							
Giant cats							
Coral							
Bryozoans							
Guide fossils							
Dinosaurs							
Fresh water fish							
Brachiopods							
Small horses							
Ferns							
Enormous winged bugs							
Trees							

Figure 12.2 Semantic-feature analysis.

Source: Bos, C. S., & Anders, P. L. (1987). Semantic feature analysis: An interactive teaching strategy for facilitating learning from text. *Learning Disabilities Focus, 3*, p. 57. Reprinted by permission of the Division for Learning Disabilities.

typical definition instruction. These strategies are implemented as group or whole class activities. They are extremely powerful in activating background knowledge and deepening conceptual understanding about vocabulary words, thereby increasing students' comprehension.

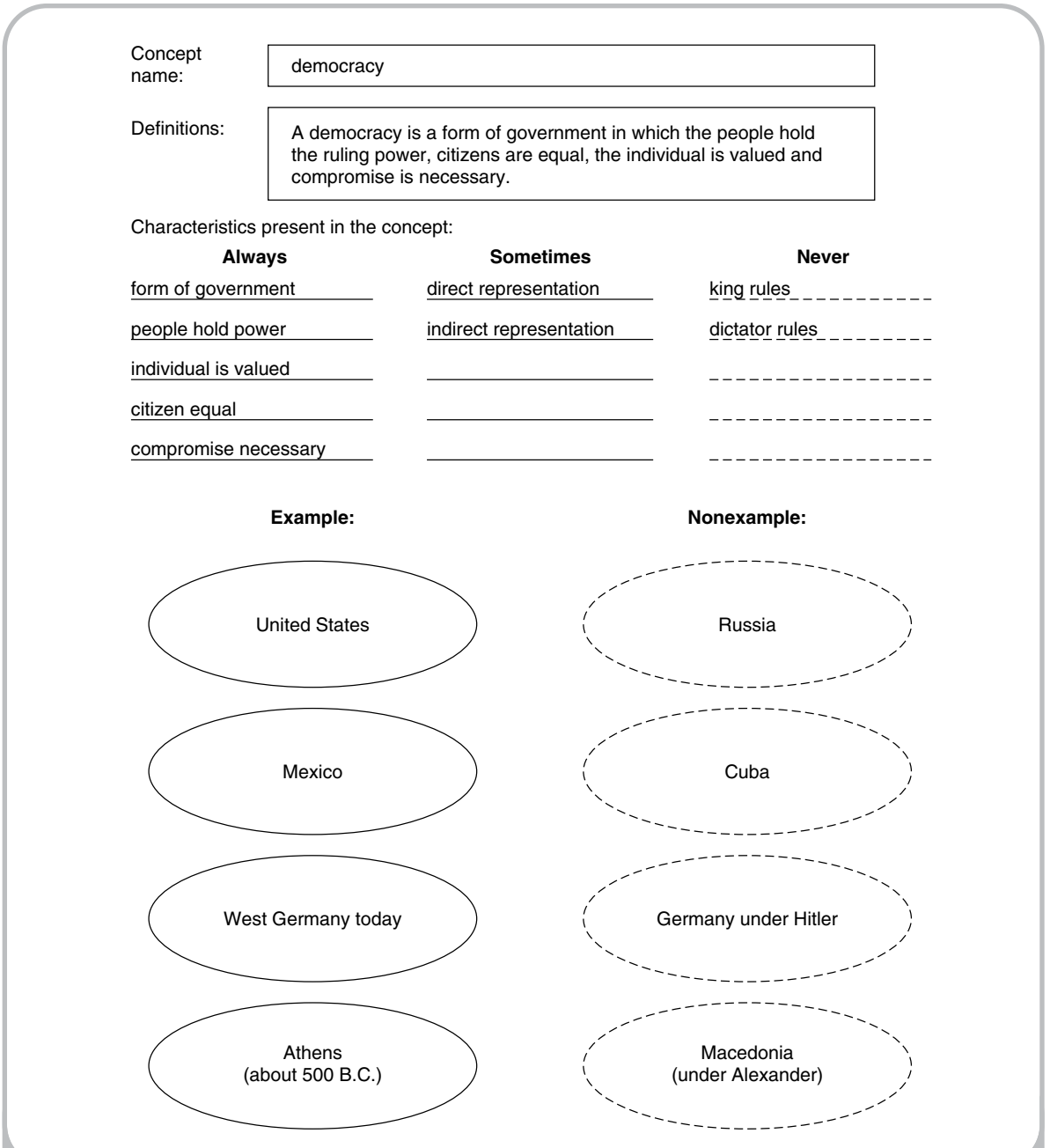

Figure 12.3 Concept diagram.

Source: Bulgren, J., Schumaker, J. B., & Deschler, D. D. (1988). Effectiveness of a concept teaching routine in enhancing the performance of LD students in secondary-level mainstream classes. *Learning Disability Quarterly, 11*, p. 6. Reprinted by permission.

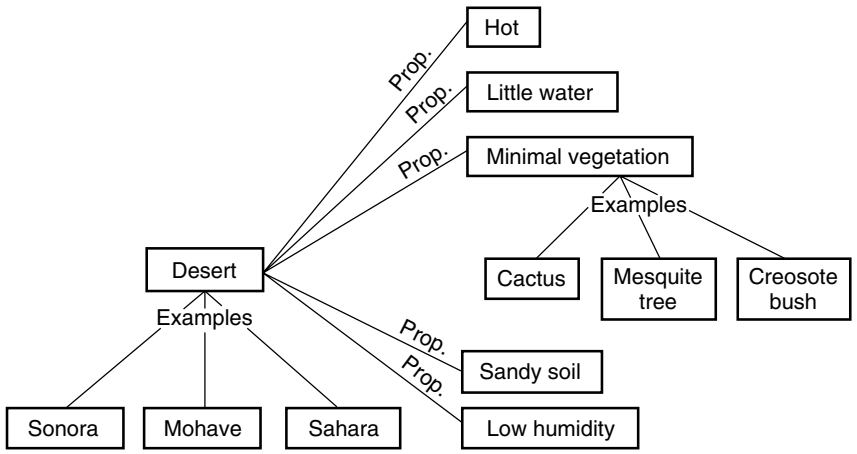

Figure 12.4 Semantic map of student's concept of deserts.

Source: Anders, P. L., & Bos, C. S. (1984). In the beginning: Vocabulary instruction in content classes. *Topics in Learning Disabilities, 3*(4), p. 59. Copyright 1984 by PRO-ED, Inc. Reprinted by permission.

Fluency

Secondary students with learning disabilities read far slower than the average teenager. In one study, teenagers with LD read about 30 to 150 words per minute compared to the approximately 90 to 190 words per minute of the average teenager. The faster you can read, the more attention can be freed for comprehension. Therefore, increasing their reading rate is an important goal for students with LD.

Because the faster you can read, the more attention can be freed for comprehension, increasing reading rate is an important goal for students with LD.

Students with LD tend not to adjust their reading rates to the difficulty of the material or the purpose for reading. Even simple assignments become major projects because students don't realize they can gain a great deal of information in a brief time from skimming. For the same reason, reading for pleasure is all too seldom attempted. There are three useful levels of skimming that should be taught to students with LD to encourage their engagement with reading materials:

Students with LD tend not to adjust their reading rates to the difficulty of the material or the purpose for reading.

Level I Scanning for points that are easy to find
Level II Scanning for an answer to a specific question
Level III Scanning for deeper information such as the main idea, the author's style, or reviewing class notes

You probably scanned at level I when you first opened this book by checking out the case studies, chapter titles, illustrations, and headings. You scanned at level

II if you wondered whether the text included information about adults with learning disabilities. It's at this level that students with LD start to have trouble. They often seem unaware of the usual organization of text material, and thus don't know where to look first. For this reason, they have trouble previewing end-of-chapter questions to gain a purpose for reading, and selecting the key words within questions so that paragraphs containing this information can be located. They need to be taught that chapter introductions and conclusions summarize content, as do each paragraph's topic or concluding sentences. Scanning at level III is the most difficult of all because it requires intensive reading and good comprehension. Students with LD need help judging which reading material requires their full attention and even rereading, and which can be scanned quickly, depending on the purpose for reading.

Reading Comprehension

Language weaknesses, inefficient learner strategies, and decoding struggles usually persist in some form beyond the elementary school years. All of these stand in the way of understanding what is read.

High school science and social studies texts often have incomprehensible lists of unnecessary details, or ramble from one topic to another. Anthologies can have a reading range of nine grade levels, and business and vocational texts are often written well above students' reading levels.

Comprehension problems are the most frequent and debilitating reading difficulties at the secondary level. Language weaknesses, inefficient learner strategies, and decoding struggles usually persist in some form beyond the elementary school years. All of these stand in the way of understanding what is read.

Unfortunately, poorly written texts with widely varying readability levels tend to make the problem worse. Science and social studies texts often contain incomprehensible lists of unnecessary details, or ramble from one topic to another. Anthologies can have a reading range of nine grade levels, and business and vocational texts are often written well above students' reading levels. In addition, the texts' sentence patterns and vocabulary are not simply "talk written down"—they tend to differ considerably from students' customary language, and there are no social cues (such as a speaker's pauses, rate, emphasis) to help one understand.

Traditionally, the approach to reading comprehension has been "bottom up." That is, students read the words in the text, expecting to derive meaning from them. This works for the average student, but not for those with learning disabilities. Their language and reasoning weaknesses, combined with a slow reading rate, make this route to understanding difficult.

"Top down" approaches are much more effective. In these approaches, teachers help students use their prior knowledge and reasoning ability to guide the reading and comprehension process. For example, teachers can first help students learn to analyze a selection's conclusions in comparison with their own experiences, ideas, and feelings. Comprehension exercises are then geared toward a number of objectives, including the ability to

1. Deal with main ideas and details
2. Paraphrase information
3. Associate, generalize, and infer based on the information given
4. Make comparisons (e.g., relationships between elements, overall structure)
5. Interpret causal relations
6. Interpret figurative language (metaphors), ambiguous statements
7. Be sensitive to sequence (e.g., events, methods, processes)
8. Interpret anaphoras or pronominalization (a word or pronoun that substitutes for a preceding word or group of words; for example, "I did *it*")

9. Separate fact from fiction, reality from fantasy
10. Evaluate an author's bias and style
11. Be cognizant of the setting, theme, plot, character development, and resolution in stories

If students discuss questions anticipating the text's content prior to reading, and their background associations are activated, they approach reading more ready to comprehend.

Applications of schema theory have proven that, if students discuss questions anticipating the text's content prior to reading, and their background associations are activated, they approach reading more ready to apply the comprehension skills listed above. Decoding too is less of an obstacle, as students are able to guess more accurately at the words because they already know the context.

Students with learning disabilities generally have mastered story grammar by sixth grade. If they haven't internalized story structure as an aid to comprehension, however, using story grammar cue cards to guide reading continues to be helpful at the secondary level.

Mutual questioning strategies between teacher and student prior to reading can be helpful to the secondary student as well. In this approach, the teacher gradually increases the cognitive complexity of the questions and responses. In the *elaborative integration strategy,* the teacher asks questions and offers prompts that help students elaborate on information by relating it to their prior knowledge. For example, "Why would changes in climate have caused the dinosaur to become extinct? . . . (prompt) "Remember, we discussed that dinosaurs could have been cold-blooded." Such coaching is very effective in improving comprehension.

Students also benefit from learning to use self-questioning techniques. For example, they can ask themselves about the main idea; who, what, where, when, why, and how questions; and then read the passage, underline, and record answers.

Techniques that require generating main idea summary sentences are particularly helpful. Summarization techniques help students discriminate and organize information so that key points are condensed into units that are likely to be remembered. One method has students skim a passage, list the key points, combine related points into single statements, cross out less important points, number the points in logical order, and finally write these up in a cohesive paragraph.

Questioning and summarizing strategies aid comprehension by actively involving students in applying their reasoning skills to reading material. As comprehension increases, so does memory for the material.

Questioning and summarizing strategies aid comprehension by actively involving students in applying their reasoning skills to the reading material. As comprehension increases, so does memory for the material. The next section presents further examples of schema theory applications that can facilitate comprehension and memory of content area material.

Reinforcing Reading and Comprehension through Content Area Instruction. Several strategies are available for increasing reading and comprehension abilities while also enhancing content area learning. The content area teacher can easily incorporate these into his or her lesson plans.

Just because a text is labeled for use at a certain grade level does not mean that it is written at a level appropriate for students in that grade.

Reading Decoding. Just because a text is labeled for use at a certain grade level does not mean that it is written at a level appropriate for students in that grade. Studies have shown that first and second grade readers contain material that ranges from the 1.5 to 3.5 grade level in difficulty. Texts at the fourth and fifth grade levels can range in difficulty from the fourth to ninth grade levels, and high

school texts can range into the college levels. Given this variability, the best way to ensure that the reading material is appropriate for a student is to apply a chart such as that shown in Figure 12.1, use a readability formula, conduct an informal reading inventory, or apply the Cloze procedure. The text's interest level and relevance to the student, as well as timeliness, are also important to consider. Controlling the interest and difficulty level of texts and assignments is critical so that students are appropriately challenged yet successful enough to remain task-oriented and motivated.

Readability formulas offer rough estimates of reading grade levels by considering such factors as average numbers of syllables or letters per word, sentence length, and the extent of unfamiliar vocabulary. Several such formulas exist. Each formula yields somewhat different grade-level estimates. Because readability formulas don't take the complexity of a passage's vocabulary, syntax, concepts, abstractness, clarity of presentation, design format, illustrations, literary style, cohesiveness, and organization into account, they should be used as only one piece of evidence in judging a text's appropriateness.

If students comprehend over 90 percent of information after reading it silently, they are capable of independently comprehending the material. Roughly 75 to 90 percent comprehension represents an appropriate instructional level. Anything below 75 percent is far too difficult.

The *Informal Reading Inventory* asks the student vocabulary, fact, sequence, and inference questions after he or she has read a passage silently. If over 90 percent of the responses are correct, the student is capable of independently comprehending the material. If roughly 75 to 90 percent of the responses are correct, the material is at an appropriate instructional level. Correct responses below 75 percent indicate reading material that is far too difficult and frustrating. When conducting an informal reading inventory, it also is appropriate to select a few passages for the student to read orally. If the student reads less than 93 to 95 percent of the words correctly, and understands an even lower percentage of the words, then the text is too difficult; the reading struggle is likely to deter comprehension even further, and perhaps even cause the student to give up. Students easily learn the "five finger test" to determine if a text or library book is too hard for them to handle. They read 100 words from a page in the middle of the book, and raise one finger for each word they can't read. If five fingers are up before the end of the page, the book is too difficult to read independently and enjoy. Finally, teachers need to check on whether the student can handle the text's table of contents, glossary, index, charts, and so forth independently.

If the student orally reads less than about 93 to 95 percent of the words correctly, and understands even less, then the text is too difficult.

For homework, class assignments, and drill work, the student should be correct 70 to 85 percent of the time. This places the work somewhere between too easy and too difficult, enough to maintain attention.

For homework, class assignments, and drill work such as spelling and sight word practice, the student's responses should be correct 70 to 85 percent of the time. This places the work somewhere between being too easy and too difficult. Either extreme usually means the student won't stay on task because he or she is either bored or frustrated.

In the *Cloze procedure,* every fifth word of a 250-word passage is blocked out. The student fills in the blanks orally or in writing. If the number of correct fill-ins approaches 50 percent, the student is anticipating enough of the text to make it appropriate for instructional purposes.

When the teacher concludes that the text is too difficult, an easier version can be assigned, such as *Hamlet* written in standard versus Elizabethan English. Although Libby may not be reading the same print as her classmates, this strategy nevertheless enables her to grasp the important themes and participate in class discussions. When no appropriate textbook is found, the teacher may need to rewrite the text, using shorter words and sentences, and less sophisticated vocabulary and

sentence structure. Unnecessary detail should be eliminated. Once the content area reading material is established, it can be used to instruct basic reading, comprehension, vocabulary, spelling, and writing skills.

Tape-recorded texts can help compensate for decoding difficulties, but often the text needs to be adapted prior to taping to be useful.

Tape-recorded texts are popular as a means of getting past decoding difficulties, but tapes alone are unlikely to solve the whole problem. Without adapting the text prior to taping, failure is still likely. This is because verbatim tapes do not help students with organizing or summarizing information, simplifying vocabulary and sentence structure, rereading, and so forth.

When creating tapes, teachers may need to adapt the tape's content (reorganize it, present only the most important information, call attention to the most important information, use easier vocabulary and grammar), highlight the most important information in the text itself, develop accompanying study guides and worksheets focused on critical content, teach study skills (such as how to get an overview of chapters, take notes, self-test, rehearse important facts), and provide background knowledge and vocabulary. The following guidelines for recording tapes are important:

1. Do not record a chapter verbatim: read the key sections, but paraphrase those that are less important.
2. Provide a short advanced organizer on the tape (outline of what's to come).
3. Point out important points: "*The most important* cause of the war was . . . ").
4. Number the points that are being made (The political parties differ in four major ways: *1* . . . , *2* . . . , *3* . . . , *4* . . . ").
5. Insert questions or reminders that encourage the listener to stop and think.
6. Read at a comfortable rate and in a natural tone of voice.

Commercially available recorded books are useful when a student can benefit from listening to an original version of a novel or textbook, or simply as leisure time enjoyment. Most public libraries and bookstores carry an extensive collection of recorded books. Schools can register students with Recording for the Blind and Dyslexic (Princeton, NJ) to receive such texts free on tape. These also are available from the American Printing House for the Blind (Louisville, KY) and the Library of Congress (National Library Service for the Blind, Washington, DC). Even magazines and daily newspapers are available on tape. Use of such tapes should be encouraged, so that the poor reader can keep up to date with world events and access the rich history and culture explored in good literature. These organizations provide cassette players that play at half speed to accommodate the student who processes information slowly. Moreover, Recording for the Blind and Dyslexic's new "AudioPlusText" PC program displays text on a computer screen synchronized with narration, so that students can follow the words visually as they listen.

Comprehension. Michael, a high school senior who sometimes struggled to comprehend lectures, was worried about the many lectures he'd encounter in college. Therefore, his high school resource teacher took him to a psychology lecture at a local university. After the lecture, she asked him several comprehension questions. He was 100 percent accurate, to her surprise, but she shouldn't have been. The lecture was on teenage sexuality! Not all lectures will be so captivating, of course, but

Activating background knowledge, interest, and awareness of text organization can greatly enhance comprehension and memory of new material.

Michael's story illustrates how by activating background knowledge and interest a teacher can greatly enhance comprehension and memory of new material. This is the objective behind schema theory approaches to comprehension.

A popular schema theory approach used in language arts classes is *literary discourse groups.* These are small groups in which students argue their interpretations of a text using evidence from the text and from their lived experience. The teacher sets a theme, such as "How far should you go to fit in?", and asks questions that lead students into literary discourses about characters' actions and motives, plot events, and so on. Each group builds a shared interpretation that is reported to the class, put into essay form, used in a debate, and more. The teacher incorporates the theme into further selections of books, plays, Internet research activities, and journal entries.

Another schema theory approach to comprehension is *semantic feature analysis.* The teacher gives each student a chart like the one shown in Figure 12.2 to list a text's main ideas and related vocabulary. The main ideas are introduced, and then students share their current knowledge about these concepts. The teacher then guides students in discovering the meaning of each vocabulary word or concept from their background knowledge or from looking in the text. The students predict whether each word might relate to the main idea by marking a +, –, 0 (no relationship), or ? in the appropriate grid. Finally, they read the text to test their predictions. Changes in the chart are made, and the reasons are discussed by the group. Students then fill in blanks in sentences using the chart as a reference (e.g., "Some extinct animals that lived in lakes are _____, _____, and _____"). Research has found semantic feature analysis to be more effective in building vocabulary and comprehension than teacher instruction of word meanings or looking words up in a dictionary and then writing sentences using the words.

The *concept diagram* is another useful comprehension strategy. The diagram shown in Figure 12.3 teaches the concept of democracy. Students define the concept and then list the attributes that always, sometimes, or never characterize it. Next students generate examples and nonexamples of the concept. They can also work up from the blanks in the examples, to the name of the concept, and finally its definition.

Semantic mapping is shown in Figure 12.4. Prior to reading, the teacher writes the key concept on the board and helps students generate ideas related to the main theme. "Tell me what you know about . . . " is an easy way to begin. After brainstorming, the students might consult the text's illustrations, headings, and bold print terms for additional clues. These are drawn branching from the key concept, and organized by category whenever possible. The map becomes an organizing guide for reading. After reading, the map is revised with greater detail.

When students have little background information to bring to a lesson, teachers can offer an *advance organizer,* which is an outline of the lesson's content. Students refer to the outline as the teacher relates the topic to previous lessons, forecasts the new information, clarifies the concepts to be learned, defines new terms, and builds interest and a purpose in reading. The advance organizer has been found to be very helpful to note taking, and the quantity and quality of learning improves.

Structured overviews are simple lists of lecture or text concepts written on the board to which students add related vocabulary words from their background knowledge. Along with technical information, the teacher lists the words and discusses the meaning of each. The vocabulary is then rearranged forming a map that links related ideas to each other. The map is revised while the class is reading the material, and then it serves as a blueprint for studying. These schema theory techniques work to improve comprehension, note taking, discussion of ideas and reactions, and test preparation for several reasons:

1. Familiarity with major ideas before reading helps students evaluate how each new sentence can be integrated with the text's overall theme and organization;
2. Readers don't have to identify the text's major ideas and organization, and therefore can pay more attention to monitoring their comprehension;
3. Readers who lack necessary background knowledge for comprehension are provided a schema to use as they read.

Charts, diagrams, and graphs, such as those in Figures 12.2, 12.3, and 12.4, can also help with comprehension. They help teachers be more systematic and thorough in presentations, compensate for disorganized texts, reduce the information to a manageable load, stimulate student interest, highlight important information, and provide a model for organizing notes. They aid memory because of the spatial arrangement. Such tools can be even more helpful when preparing for tests than study guides on which students answer a series of questions.

Presenting science and social studies passages using a computer with a digitized voice that reads the words aloud as they are highlighted (bimodal presentation) is another powerful strategy for increasing comprehension. There are other helpful strategies as well: filling in outlines provided by the teacher, underlining or using margin notes to highlight key points in the text, asking oneself "Who or what is the paragraph about . . . what happened?" after each paragraph, selecting or creating topic sentences that summarize a paragraph, contrasting key words while reading, differentiating important from unimportant details, orally summarizing a passage and thinking of two details to go with each main idea, recording answers to the "wh" questions as one reads, or simply rereading. Teachers also can create exercises in which students must detect a sentence in a paragraph that is irrelevant to the main idea, select which sentences could be added to the paragraph, and reorder sentences so that main ideas and subordinate information interrelate better. Finally, the thinking skills goals and metacognitive strategies described in Chapter 7 have been very helpful to the progress of teenagers with LD. When directly taught, students with LD can learn to reason logically, use analogies to prior knowledge to help them reason, and critically evaluate information based on the evidence at hand.

When directly taught, students with LD can learn to reason logically, use analogies to prior knowledge to help them reason, and critically evaluate information based on the evidence at hand.

In addition to comprehension exercises focused on reading, teachers need to use oral class time to increase understanding through listening exercises. Purposes for listening are set, the students listen, and then they respond to questions built on the 11 comprehension objectives listed earlier in this chapter. These exercises help with note taking as well, and can sharpen a youngster's ability to pick up information from the environment—an important asset in and out of school.

Written Language

Written language remains one of the most unsuccessful areas for adolescents with learning disabilities. Spelling remediation and handwriting instruction need to continue when appropriate. Students also need to build compensations by learning to use the dictionary and the spell check on the computer, learning to check for homonyms and grammatical errors that their computers may not catch, and learning to proofread for spelling by scanning sentences backwards (try it; it works!). A misspeller's dictionary may be helpful (Figure 12.5) as may learning to type, provided typing doesn't present the same fine-motor difficulties as handwriting.

The main priority in written language instruction for students with LD is to master conceptual writing.

The main priority for students with LD is to master conceptual writing. Too often these students approach writing as though it were simply talk written down. They have a poor sense of the audience's perspective and therefore omit time, sequence, and organizational words that are meant to help the reader (such as "later," "first," "finally," "the reason . . . ," "the most important," "to summarize"). They need to learn to repeat words and synonyms for clarity when refer-

Incorrect	*Correct*	*Incorrect*	*Correct*
kitastrofy	**catastrophe**	komfortable	**comfortable**
kitin	**kitten**	koming	**coming**
kleek	**clique**	kommunist	**communist**
klorine	**chlorine**	koris	**chorus**
knifes	**knives**	kraft	**craft**
knoted	**knotted**	kronic	**chronic**
knowlege	**knowledge**	kwik	**quick**
kolic	**colic**	kwire	**choir**
kolyumnist	**columnist**		

Look-Alikes or Sound-Alikes

kernel (seed) • **colonel** (officer)

kill (murder) • **kiln** (oven)

knead (to press) • **need** (must have)

knew (did know) • **gnu** (animal) • **new** (not old)

knight (feudal rank) • **night** (opposite of day)

knot (what you tie) • **not** (no)

know (to understand) • **no** (opposite of yes)

Figure 12.5 Sample page from a misspeller's dictionary.

Source: Adapted from Krevisky, J., & Linfield, J. L. (1963). *The Bad Speller's Dictionary,* p. 81. New York: Random House. Copyright © 1963, 1967 by Innovation Press. Reprinted by permission of Random House, Inc.

ents such as *he, those, the same,* are unclear. Using transition words such as *therefore, however,* and *for example* to smooth the flow of their writing also is an important goal, as is using different sentence types (e.g., simple and complex, declarative and interrogative).

The most effective written language teaching activity for high school students is one that emphasizes the need to problem solve by gathering, analyzing, and reorganizing information. The traditional emphasis on handwriting, spelling, punctuation, and grammar does nothing to excite students about writing, nor does it stimulate them to develop conceptually or stylistically.

One useful technique for encouraging writing is *uninterrupted silent sustained writing.* Several times a week, for 5 or 10 minutes, students write about anything that comes to mind. They write quickly and without making corrections, and the product need not be shared with anyone. Keeping a personal journal also helps students get over the hurdle of even trying to write. *Interactive journal writing* is a variation in which the teacher and student converse in writing. Teachers avoid asking questions or evaluating the writing. The conversational give-and-take encourages students to use higher-level discourse in their writing and experiment with ideas.

Figure 12.6 on page 456 presents a more structured approach to writing in which the mechanics are disregarded until after the student works out ideas. This is a systematic technique that guides the student to express his or her own thoughts in a cohesive manner. Cue cards such as those in Figure 12.7 on page 457 also can be very helpful to paragraph development.

Writing instruction incorporating the steps of the writing process's prewriting, drafting, and revising stages, in combination with the word processor, can be particularly effective in improving writing quality, as can offering students story starters or story enders. The self-check statements in Figure 12.8 on page 458 also have helped students with LD with the difficult process of revising.

Story grammar cue cards such as the one shown in Figure 11.2 on page 419 can help students produce longer and higher-quality stories, especially when cues ask for more detail (e.g., "Tell the characters' thoughts, feelings, emotions, and reasons for doing what they do. Make sure they think and feel just as real people do"). Similarly, compare/contrast essays become clearer, more logical, and have more appropriate content when students follow a planning diagram that lists the topic, thesis, various compare/contrast ideas, and the conclusion. Also helpful are peer editing strategies that use interactive dialogues or respond to specific questions about each other's work, such as "Is there anything that is not clear?" "Where could more detail and information be added?" "Could you use a synonym?" "Did you use a million dollar word?" Research shows that gains from peer editor support are maintained even when the peer editor strategy is discontinued. Finally, simply listening to a taped version of one's writing can help students detect areas for revision, especially if the writing contains grammatical errors.

It is critical that teenagers with learning disabilities master basic writing skills. Ultimately, they will apply for jobs or go on to postsecondary education where the written product will play a large part in determining an individual's future options. Also, the better developed and organized that their writing becomes, the more that students become aware of the organization inherent in language. This, in turn, improves their memory for what they hear or read.

Steps	Description
I	Write a short, simple, declarative sentence that makes one statement. This should be a sentence about an idea you have and not merely a description of how something looks or directions on how to make something.
II	Write three sentences about your subject in Step I that are clearly and directly about the entirety of that subject and not just some small aspect of it. A key to this step would be to think of the questions someone would typically ask about your subject. A) _____ B) _____ C) _____
III	Write four or five sentences about each of the three sentences in Step II. A) _____ 1) _____ 2) _____ 3) _____ 4) _____ B) _____ 1) _____ 2) _____ 3) _____ 4) _____ C) _____ 1) _____ 2) _____ 3) _____ 4) _____
IV	Make the material in the four or five sentences in Step III as concrete and specific as possible. Go into detail. Give examples. Don't ask, "What will I say next?" Say some more about what you have just said. Your goal is to say a lot about a little, not a little about a lot. Details are important. Avoid abstract terms.
V	In the first sentence of the second paragraph and every paragraph following, insert a clear reference to the idea in the preceding paragraph. In this step, relate each paragraph to the preceding paragraph and provide smooth transitions in the composition.
VI	Make sure every sentence in your theme is connected with, and makes clear reference to, the preceding sentence.

Figure 12.6 Method for teaching written composition skills.

Source: Adapted from Kerrigan, W. J., & Metcalf, A. A. (1987). *Writing to the point: Six basic steps* (4th ed.) New York: Harcourt Brace Jovanovich.

Mathematics

In high school, mathematics becomes particularly difficult for even those students with learning disabilities who were able to manage math in elementary school. Al-

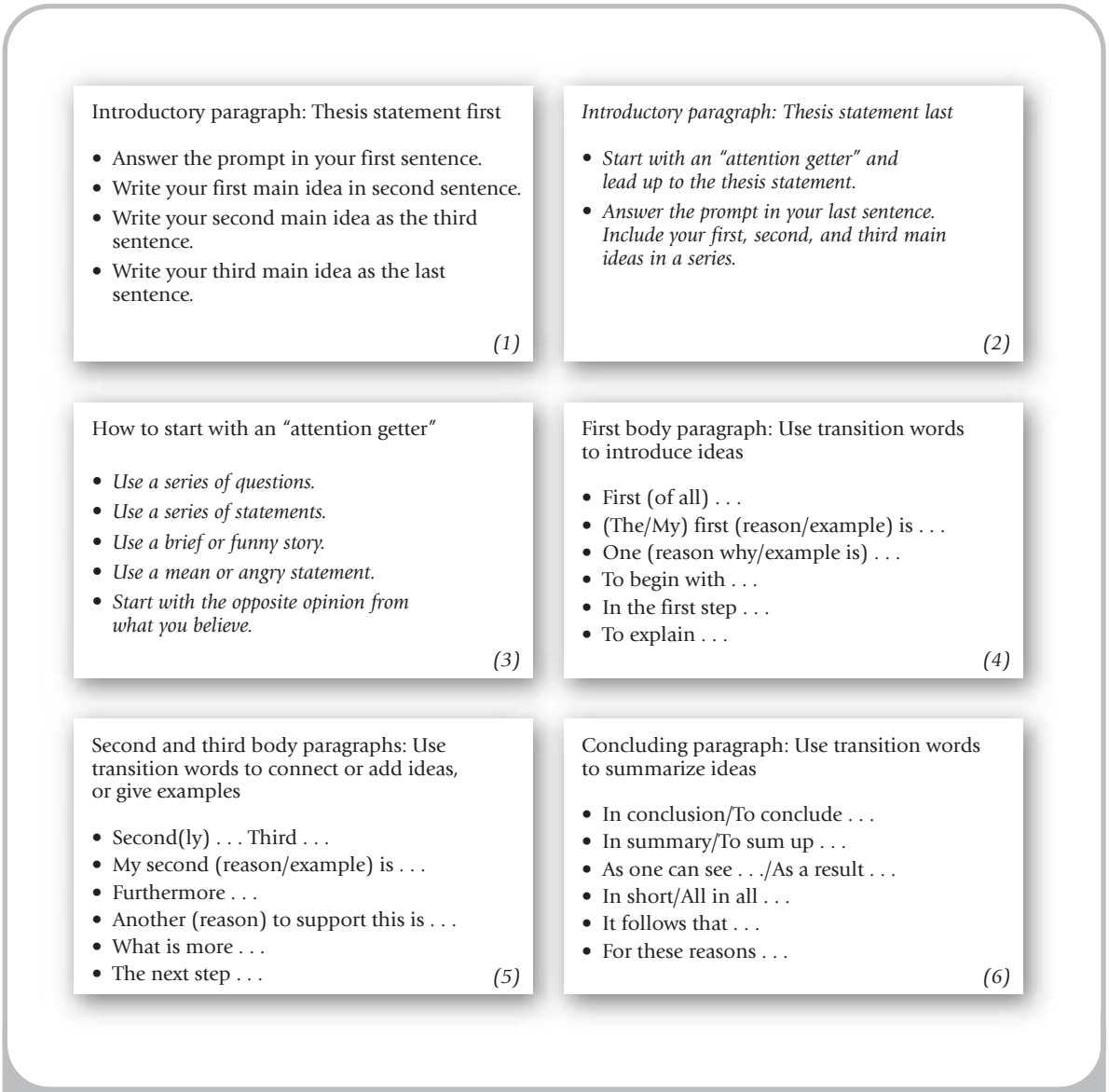

Figure 12.7 Cue cards for paragraph development. These cards are followed to respond to a "prompt" given by the teacher, for example, "Where should the class go for a field trip and why?"

Source: De La Paz, S., Owen, B., Harris, K. R., & Graham, S. (2000). Riding Elvis's motorcycle: Using self-regulated strategy development to PLAN and WRITE for a state writing exam. *Learning Disabilities Research & Practice, 15,* p. 102.

gebra, geometry, and trigonometry demand a new vocabulary—*tangent* and *sine,* for example; new symbols (π and $\sqrt{\ }$); more complex word problems; and sophisticated logical and perceptual reasoning. Mathematics remediation methods for this

Evaluative Phrases

A. Readers won't see why this is important.
B. People may not believe this.
C. People won't be very interested in this part.
D. People may not understand what I mean here.
E. This is good.
F. This could be said more clearly.
G. Even I am confused about what I am trying to say.
H. This doesn't sound quite right.
I. This sentence states the topic.
J. This sentence sums up what I have said.
K. This sentence doesn't follow a logical order.
L. This shows what I really think.
M. This does not sound like a conclusion.

Directive Phrases

1. I'd better leave this part out.
2. I'd better say more.
3. I'd better cross this sentence out and say it in a different way.
4. I'd better change the wording.
5. I think I'll leave it this way.
6. I'd better support what I'm saying with facts.
7. I'd better move this sentence.

Figure 12.8 Evaluative and directive phrases to assist writing revisions (adapted from Bereiter & Scardamalia, 1982).

Source: Reynolds, C. J., Hill, D. S., Swassing, R. H., & Ward, M. E. (1988). The effects of revision strategy instruction on the writing performance of students with learning disabilities. *Journal of Learning Disabilities, 21*, p. 541. Copyright 1988 by PRO-ED, Inc. Reprinted by permission.

Math remediation methods at the secondary level focus on making sense of the mathematical processes and developing problem-solving strategies.

age group focus primarily on making sense of the mathematical processes, and developing problem-solving strategies, including self-checking techniques, listing problem-solving steps, enlisting the help of visual aids, and verbal self-instruction.

Word problems pose multiple challenges for students with learning disabilities. They must first read the problem. Then, because not all the information is usually given in the problem, they must apply some additional knowledge. They must also translate the math vocabulary imbedded in the problem into a numeric operation, then retranslate the problem's solution back into language. To complicate matters further, word problems usually include extraneous information that can sidetrack students.

Nevertheless, managing word problems is important because a good number of mathematical problems in real life are in word form, and they tend to be even more difficult because they are presented orally and solved mentally. For example, when the salesman tells you the cost of two items, you must mentally add the numbers and estimate whether you have enough money. The same is true for estimating whether you have enough time to make the train.

Mastering functional math skills is critical for students with severe math reasoning weaknesses.

For adolescents who continue to have great difficulty with very basic mathematical reasoning and computations, experts recommend focusing on the skills needed to function in adult life, such as those listed in Figure 12.9. It's particularly important to teach students to estimate answers before solving problems so they can evaluate the reasonableness of their answers. These "survival" skills are best practiced within real-life contexts. Science and social studies content also can be utilized to reinforce functional math skills, as in translating federal reserve rates

Consumer Skills
- Making change
- Determining cost of sale items utilizing percentages (e.g., "25% off")
- Determining tax amounts
- Doing cost comparisons
- Buying on "time"
- Balancing a checkbook
- Determining total cost of purchases

Homemaking Skills
- Measuring ingredients
- Budgeting for household expenses
- Calculating length of cooking and baking time when there are options (e.g., for a cake using two 9" round pans vs. two 8" round pans)
- Measuring material for clothing construction
- Doing cost comparisons

Health Care
- Weighing oneself and others
- Calculating caloric intake
- Determining when to take medication

Auto Care
- Calculating cost of auto parts
- Measuring spark plug gaps
- Determining if tire pressure is correct
- Figuring gas mileage

Home Care
- Determining amount of supplies (paint, rug shampoo) to buy
- Determining time needed to do projects
- Measuring rods and drapes
- Finding cost of supplies
- Finding cost of repairs

Vocational Needs
- Calculating payroll deductions
- Determining money owed
- Knowing when to be at work
- Doing actual math for various jobs

Figure 12.9 Content for teaching functional math.

Source: Schwartz, S. E., & Budd, D. (1981). Mathematics for handicapped learners: A functional approach for adolescents. *Focus on Exceptional Children 13* (7), pp. 7–8. Reprinted by permission of Love Publishing, Denver, Colorado.

into practical implications for borrowing money, or the results of a drug study into the percentage of personal risk when taking a particular drug.

Study and Test-Taking Skills

Students with learning disabilities, especially those with attention weaknesses, routinely forget to write down assignments, complete homework, or hand it in on time. They have great difficulty using their time wisely, breaking down long-term assignments into manageable pieces, developing reasonable timelines, and following through. Unless tasks are highly interesting or carry rewards or penalties, students have difficulty persisting or even getting started. If these students are to remember what they are taught and succeed, they need to develop good study skills such as note taking, outlining, library, and test-taking skills. The key word in each of these areas is *organization*.

A well-planned time schedule and a disciplined study approach are essential. Students can employ such organizational aids as 3 × 5 inch cards with reminders about what needs to be done today, in two weeks, or weeks from now. Post-it notes are also great for this purpose, provided they are placed judiciously where the student can see them. A well-organized notebook, complete with weekly and monthly calendars, is also essential. Consulting with parents and teachers on realistic daily and long-term goals is a must, as is rewarding oneself for meeting these goals (e.g., time to work out, go to a movie). Students with LD can also be assigned to observe their peers' study habits and adopt those they believe might work for them.

Coaching ***is very effective in helping students with organization and study skills.***

Coaching is another approach that has proved very effective. Students who volunteer to meet with a "coach" determine long-term goals such as attending a moderately competitive college, making the soccer team, or getting a specific job. Then they meet with the coach for 10 to 15 minutes a day to monitor that day's progress and to plan exactly what to do tomorrow (Figures 12.10 and 12.11). The daily goals include not only task completion and good grades, but also behavioral commitments such as participating in class discussions. Barriers to reaching goals, such as skipping class or not doing homework, are discussed and worked on. Environmental supports, such as going to the library to study or asking mom to type a paper, also are decided on. The coach can be a caring teacher, an athletic coach, or teacher's aide—anyone with whom the student has a positive, trusting relationship. The students' self-evaluation and verbal commitment are keys to success, as is the coach's daily enthusiasm and encouragement. Hopefully, habits are modeled that will persist long after the coaching relationship has ended.

Note Taking Skills

Most students find that underlining in the text is helpful to remembering key facts and important details. But students with language weaknesses may still need to go back and reread all the material before an exam in order to understand the context of the underlined phrases. Note taking can be an effective alternative strategy. It forces a student to paraphrase, organize, and elaborate on new information. It involves finding key concepts, separating the important from the less important, and summarizing pertinent information. Such active processing makes the information more meaningful and memorable. Students who take notes remember more than those who don't; the more information in the notes, the better is their test performance.

Students who take notes remember more than those who don't.

As in note taking from text, note taking during lectures frees the listener from trying to memorize what the speaker is saying. This is an important skill to develop because teacher lectures are the major source of information on which tests are based. Note taking during lectures, however, can be particularly problematical for students with LD. It requires attending, listening, comprehending, paraphrasing, identifying the most important information, and writing all at the same time. Students with LD tend to record less information, fewer units of information that the instructor had cued as important, use fewer abbreviated words, and write slower.

Although it is the student's responsibility to take notes, it is the teacher's responsibility to give lectures that are so well organized that relationships are clear

Long-Term Goals Planning Sheet

Student's Name: Leah Brody Date: November 18, 1997

What is your long-term goal?

Goal 1: Pass English in order to be eligible to try out for the volleyball team

What do you need to do to meet your goal?

1. take notes in class
2. write down all assignments
3. do homework
4. hand in homework
5. revew before tests

Are there barriers you need to overcome in order to meet your goal?

1. trouble taking notes and listening at the same time
2. watching TV instead of doing homework
3. not studying for tests

How can you overcome these barriers?

ask the teacher for her notes.
watch TV only after finishing homework
study with a friend

What environmental supports or modifications are necessary in order to help you meet these goals?

The teacher needs to share her notes
My parents need to drive me to my friend's home

What is your long-term goal?

Goal 2:

What do you need to do to meet your goal?

1.
2.
3.
4.
5.

Are there barriers you need to overcome in order to meet your goal?

How can you overcome these barriers?

1.
2.
3.

What environmental supports or modifications are necessary in order to help you meet these goals?

Do you think these are realistic goals?

V Yes

____ No—How can they be modified?

Figure 12.10 Long-term goals planning sheet used in coaching.

Source: Adapted from Dawson, P., & Guare, R. (1997). Reproduced with permission of Multi-Health Systems, Inc. 908 Niagara Falls Blvd., North Tonawanda, NY 19120–2060. (800) 456-3003.

Coach Monitoring Sheet

Name: Leah Brody Date: November 28, 1997

THE BIG PICTURE:

Upcoming tests/quizzes:

Subject:	Date:
English	Dec. 1
Math	Dec. 3
Earth Science	Dec. 3

Long-term assignments:

Assignment:	Date Due:
Shakespeare paper	Dec. 15
Science project	Dec. 17

Other responsibilities:

Task:	Date:
Apply for x mas break job	Dec. 5
Invite friends to birthday party	Dec. 10

TODAY'S PLANS:

What are you going to do?	When will you do it?	Did you do it?	How did you do?*
Academic Tasks:			
1. English homework	1. today 7:00 - 7:45 pm	(Yes) No	1 2 3 (4) 5
2. Shakespeare note cards	2. Saturday afternoon	Yes No	1 2 3 4 5
3. go to library for science project	3. Thursday night	Yes No	1 2 3 4 5
4.	4.	Yes No	1 2 3 4 5
5. review for math quiz	5. today 7:45 - 8:15 pm	(Yes) No	1 2 (3) 4 5
6.	6.	Yes No	1 2 3 4 5
Behavioral:			
1. talk on phone only when homework is done	1. every day	Yes (No)	(1) 2 3 4 5
2.	2.	Yes No	1 2 3 4 5

*Use this scale to evaluate: 1—Not well at all; 2—So-so; 3—Average; 4—Very well; 5—Excellent

GENERAL OBSERVATIONS REGARDING GOALS/PERFORMANCE:

I have trouble getting started with homework and then rush it so I can watch my favorite TV shows

Figure 12.11 Coach monitoring sheet for daily tasks.

Source: Adapted from Dawson, P., & Guare, R. (1997). Reproduced with permission of Multi-Health Systems Inc., 908 Niagara Falls Blvd., North Tonawanda, NY 19120–2060. (800) 456-3003.

It is the teacher's responsibility to give lectures that are so well organized that relationships are clear to students.

to students. Teachers can incorporate several techniques that help students take notes: use advance organizers; link information from previous lectures to the current one; use words that cue an important concept—"in summary," "this is important to remember"; repeat key ideas and phrases and give students time to write them down; use voice quality to stress important ideas; number the points being made (*first, second*); use time cues (*next, finally*); write important ideas and technical terms on the board; ask questions periodically to see if students are understanding; ask questions to relate the new information to students' background

knowledge; present examples and nonexamples of a concept; use pictures and diagrams to illustrate relationships among ideas; and allow time at the end of the lecture for students to review their notes and ask questions.

Beyond the teacher's organized lecture approach, structured lessons on note taking are important. Videotaped or audiotaped lessons are helpful because students can replay the tapes for different instructional purposes, for example, to listen for details or cue words that alert the listener to a major point. When practicing note taking from tapes, attention to detail and organization of the information can be taught by giving the student a form to complete that asks: What is today's topic? What do I already know about the topic? Record and number up to seven main points and list related details. List new terms. Summarize how the ideas relate to the topic.

Learning to recognize cues that signal important information in students' texts also is important: headings, bold print, italics, listed and numbered items, asterisks, and bullets. Some students prefer drawing "webs" or "maps" to the standard form of note taking, and the teacher can help them learn to organize information in this format.

When taking notes in the standard way, a two-column system is helpful. Students take notes in a broad right-hand column and use a narrower left-hand column to list key concepts that summarize the information in the right-hand column. When studying, the right-hand information is covered, and the left-hand column is used to ask oneself questions that trigger these details. In three-column systems, the far left column is used for recording related notes from the text, known information relevant to the topic, comments, questions for the teacher, future assignments, and so forth. Rereading notes immediately after taking them is important in order to fill in gaps and label key concepts. Reducing notes to the essential points, organizing the information, classifying ideas, reciting the material, and reviewing it are essential in order to have note taking benefit the student.

Students who take lecture notes learn more than students who don't, and they learn more from taking their own notes in their own words rather than using someone else's notes. Nevertheless, there are some students who benefit best from listening only. They tend to be those with poor short-term memory, low general ability, and little prior knowledge about the subject. For them, taking notes is an additional processing burden. Teachers can provide these students with copies of their lecture notes or permit students to use a copy of a peer's notes. Teacher-prepared guides on which the student merely fills in key words also can be helpful.

Students learn more from taking their own notes in their own words rather than using someone else's notes. Nevertheless, for some students taking notes poses too much of an additional processing burden.

Outlining Skills

By design, outlines assist the adolescent in organizing ideas for writing, for taking notes on what's being read, and for note taking during lectures. Teachers can structure assignments into main ideas, subheadings, and details, so that outlining is simple and obvious, thereby giving students practice in using this helpful skill.

But many students find outlining, especially from a text, tedious. Sorting the material into superordinate categories may be difficult, or they may get bogged down in the mere mechanics of writing and spelling. An alternative is penciling

notes in the margins. A method taught in a Brown University study skills course teaches that there are only seven types of questions the student is ever asked:

1. *Definition/identification:* explicit definition of ideas and the person/group who originated or supported the idea.
2. *Cause/effect.*
3. *Location/spatial relations:* geographical and nongeographical (e.g., molecular structure, location of cell types in the brain).
4. *Time/temporal relations:* specific dates or time periods and relationship (e.g., how the past influences the present).
5. *Method:* how something is accomplished or resolved (e.g., political policies that accomplish a goal).
6. *Type:* into which subtypes has the author subdivided the main idea?
7. *Motive.*

For about five minutes, the student prereads ten pages of topic sentences, introductions, summaries, and illustrations to forecast which of the above categories are most relevant to the content area. Next he or she reads the text, continually asking if the information is important enough to memorize for a test. If so, the student jots down the category in the margin and what it should trigger. For example, for Madame Curie, the student writes "ID (identification): discoverer of radium." For the date and cause of the Civil War, the student records "Time: Civil War" and "Cause: Civil War." As the student records these, he or she simultaneously verbalizes the answer. When the student reaches the bottom of the page, he or she reads all the notations to see if they trigger the answers. If not, the corresponding sentences are reread and a check placed next to the trigger to indicate a difficult item.

Students proceed like this for ten pages, and then review their recall of all the triggers. And then they take a well-deserved 15-minute break! Information that continues to be difficult to trigger is written in a notebook in sentence form.

This system is virtually foolproof in improving performance on exams if followed judiciously. This is because information is being organized into meaningful categories and rehearsed three times. Teenagers don't find it tedious because they are encouraged by how much they remember as they go along.

Library Skills and Internet Searches

Libraries, with their computer catalogs, Dewey Decimal System, indexes, encyclopedias, dictionaries, almanacs, and so on, can be intimidating for anyone. Teachers can create activities to promote library use and help students understand what riches are contained inside those walls. Exploring libraries' multimedia materials may be a good way to stimulate student interest. For many students with LD, these materials and Internet searches, rather than reading, may become the primary tools for acquiring knowledge throughout life. When they don't become comfortable with a library during their school years, an important avenue for lifelong learning may be shut off. A key objective for the teacher is to help students evaluate the validity of the information they are accessing in the library or over the World Wide Web. Just because it's written down does not mean it's true.

Teachers must help students evaluate the validity of the information accessed in the library or over the Internet. Just because it's written down doesn't mean it's true.

Test-Taking Skills

Most adolescents with learning disabilities need to be taught test-taking strategies to be able to, at the very least, accurately show what they do know. After learning these strategies their scores improve more than that of the nondisabled, because the average student already applies many of these approaches automatically. Figure 12.12 on page 466 illustrates two procedures that have helped students get ready for and take tests. Some experts have suggested that students star the 25 most important items in their notes and focus mostly on these. This makes the task more manageable by focusing on only essential details, allowing more time for repetition, and avoiding overloading. Mnemonic strategies are very useful as well, given that most teachers prepare exams that ask primarily for recall or recognition of facts. Students also can be permitted to bring one 8.5 × 11 inch "cheat sheet" to the test. By the time they've created this sheet, they've usually memorized the information anyway. And this method teaches students that understanding the main idea is more important than memorizing details, as long as you know where to go to find the specifics when you need them. Another alternative, though not as successful, is filling in blanks in diagrams while studying.

Many experts suggest that we replace tests with performance assessment whenever possible: demonstrations, projects, recitals, portfolios.

An important goal for teachers is to help students communicate what they know as competently as possible. Because of the learning disabled's poor performance on tests, many experts suggest that we substitute performance assessment whenever possible: demonstrations, projects, recitals, portfolios, and so forth. The variety of possible portfolio types and grading systems were explored in Chapter 8.

Transition Planning

Planning ahead for postsecondary educational and career opportunities is an important part of the high school program. Teenagers also need to learn practical life skills for their entry into the adult world. Presumably this has been part of their schooling so far: reading—for menus, directions on prescriptions, credit card rules; comprehension—for figuring out the voting booth and whom to vote for; math—for budgeting, completing a tax return; written language—for completing job applications and writing a cover letter when returning a mail order item; and study skills—for the all-important driver's test. Yet many high school students with LD are weak in these basic skills or have trouble generalizing them from the classroom to real life. Compounded by social and emotional difficulties, the forecasts for life adjustment can be shaky. Therefore, transition planning is a necessity.

Many students with LD have trouble generalizing learned skills from the classroom to real life.

Students who have some vocational education or paid on-the-job experience tend to be more successful in the job market than those who don't.

Career and vocational education and preparation for postsecondary schooling are priorities for transition planning. Students who have some vocational education or paid on-the-job experience tend to be more successful in the job market than those who don't. Vocational education programs can be helpful, but many of them are geared to less intelligent students or to delinquents. Thus many students who are learning disabled avoid them. Programs geared to the average student population, on the other hand, may be too academically oriented and geared toward higher-level occupations. Therefore, for students with LD a flexible class schedule that permits them to work a few hours a week may be the best answer. Participating in school-operated small businesses and job clubs also offers valuable opportunities to explore

Preparing for Tests

1. The student should ask the teacher exactly what material will be on the test and what aspects of it will come from the notes, lectures, or textbooks. The student should also ask what the format of the test will be: true-false, essay, short answer, or multiple choice.
2. The student should obtain copies of previous exams (and their answer sheets) from other students who have taken the course or from teachers themselves. Students should be "test wise" and know what type of questions are usually on the exams and which topics are emphasized.
3. The student should be instructed in setting up and following a study schedule. This alleviates some of the necessity of cramming for tests, an ineffective method for all students—especially for students with LD who have reading problems. A brief review of the material following each class helps the student remember the content.
4. The student should understand testing terms such as *compare, contrast, illustrate, briefly describe, define,* and *elaborate.* The student should also note the relative point value the teacher places on different test items. This is an indication of how much information is needed to adequately answer the questions and how much time the student should spend answering it.
5. Students should be encouraged to approach the testing situation with a positive mental attitude. Discussing feelings ahead of time can be helpful and provides the teacher with an opportunity to reinforce the student's abilities and positive outlook toward the test.

SCORER Technique

S = *schedule* your time. How many questions are there, and how much time is there to complete the exam?
C = *cue* words. *All, never,* and *always* rarely indicate a true answer on a true-false test but *usually* or *sometimes* often do.
O = *omitting* or setting aside the difficult questions. Answer the easiest questions first and then go back.
R = *read* the directions and examples carefully.
E = *estimate* the approximate range of possible answers for a question; e.g., the area of a shoe box will be in square inches, so answers in square feet may be disregarded. You should also "guesstimate" the answer if credit is not taken off for doing so.
R = *review* your work. Make sure all questions are answered with the correct letter or number and be very cautious about changing answers without substantiation for the new choice.

Figure 12.12 Procedure for preparing for tests and the SCORER technique.

Sources: Alley, G., & Deshler, D. (1979). *Teaching the LD adolescent: Strategies and methods.* Denver: Love Publishing Company; Carman, R. A., & Adams, W. R., Jr. (1972). *Study skills: A student's guide for survival.* New York: Wiley.

talents and careers, gain self-confidence, learn interviewing skills (timeliness, appearance, posture, politeness, conversational skills), resumé writing, and role-playing employment situations such as accepting a compliment, giving constructive criticism to a coworker, accepting instruction or criticism from a supervisor, and explaining a problem to a supervisor. All these skills can increase job retention.

Given that students with LD have so much to prepare for, teaching goals and materials must have very practical, everyday value, and be taught in as real life a setting as possible.

Given that students with learning disabilities have so much to prepare for, teaching goals and materials must have very practical, everyday value. The more natural is the setting for learning adult survival skills, the better are the results for adolescents with LD. Money management, for instance, can be taught using an actual checking account or debit card. Reading, writing, and problem solving can be taught throughout the process of applying for, testing for, and earning a driver's license. And we can't forget about essential independent living skills such as cooking, cleaning, shopping, hobbies, leisure time interests, and "using" the community.

Transition planning includes the student, his or her family, adult service and educational organizations, and potential employers.

Adult service organizations, postsecondary educational institutions, and potential employers need to be brought into the transition planning process as needed. Family involvement too is essential to the transition planning process, not only because students need and benefit from family support but also because many students with LD continue to live at home after graduation. The responsibility for continued guidance, then, falls primarily to the family.

Social-Emotional Adjustment

It's the quality of human interactions, more than academic knowledge or even intelligence, that makes for a full and satisfying life. The more positive are students' social relationships and the higher their self-esteem, the more likely they are to be successful in life.

Although we usually associate school with learning facts, it's also true that education is essentially a social process. It's the quality of human interactions, more than academic knowledge or even intelligence, that makes for a full and satisfying life. The more positive the student's social relationships and the higher his or her self-esteem, the more likely the student is to be successful in life. But positive social relationships and self-esteem don't come easily to many students with LD.

The school's role in building social relationships, thinking skills, speaking skills, and self-esteem is vital to the social-emotional adjustment of the learning disabled. It is peers who choose to befriend students with LD or ignore them, thereby reducing their social learning opportunities. Therefore, interventions need to target both groups. Involving peers in social skills programming, or family members in counseling, and teachers in consultation is important when these individuals' behaviors and attitudes are affecting the self-esteem and social adjustment of students with LD.

Social Relationship Programming

Many students with learning disabilities need directed practice with acceptable social behaviors. They do this best in environments that are conducive to sharing feelings and to learning about others' willingness to listen and help. Group discussions, for example, promote positive social-emotional growth and understanding among teenagers when they encourage students to engage in behavior that satisfies their personal needs without impinging on the needs of others. Classwide peer tutoring, described in Chapter 11, helps build social relationships while at the same time reducing failing quiz grades, tardiness, and truancy.

Good social skills involve so many reasoning skills with which the learning disabled may not be adept: thinking in a variety of ways about an issue, monitoring one's thoughts, evaluating choices and probable consequences, thinking positively (as in saying to oneself "I'm so *excited* about the job interview!" vs. "*nervous*"), recognizing similarities between old and new situations so proven strategies will be used, challenging assumptions so as to look at information in a new way and gain new insights, and being clear about personal values and connecting these to one's behavior choices. Promoting the thinking skills discussed in Chapter 7 is very helpful in developing these skills, especially when the lessons of formal thinking skills programs are connected with real-life situations to which these skills can immediately be applied. Goldstein's *Prepare Curriculum,* for example, uses modeling, role-playing, and videotaping to teach cooperation, interpersonal skills, anger control, stress management, moral reasoning, and empathy. Behaviors practiced in the group are assigned as homework to be tried out in real-life situations. Students report back at the next class. Brainstorming sessions also can help develop social reasoning skills when the following rules are followed:

1. Criticism is not allowed.
2. The wilder the idea is, the better, because freedom of expression stimulates more creative ideas.
3. Come up with as many ideas as possible, making sure that all are recorded on paper, videotape, or tape recorder.
4. Expand on each other's ideas and try combining and improving on other's suggestions.

Curricula that develop nonverbal skills for socially imperceptive students are also important. These students need to learn about body language cues, use of personal space, cosmetics, clothing, and sensitivity to vocal nuances.

Due to short-lived programs or nonmeaningful goals, gains from formal social skills programs have been modest, and generalization to everyday circumstances limited. Skills taught must be personally meaningful, taught in as natural a setting as possible, and students must learn to recognize which social circumstances call for which behaviors.

Unfortunately, gains from formal social skills training programs have been modest, for the most part, and generalization to everyday circumstances is limited. These programs tend to be too short-lived, poorly applied, and not targeted specifically enough to the needs of students to be able to turn around years of social skills deficits and missed social learning opportunities. Moreover, many students with LD have difficulty judging when a particular behavior that is already in their social repertoire, or that they just practiced "in group," is appropriate to use. Therefore, if we are going to teach these skills, it's important that the skills taught be socially meaningful to the student, taught in as natural a setting as possible, and that we help students analyze which social circumstances call for which behaviors. One way of doing this is by establishing networks of students without disabilities who provide social support during school activities to their learning disabled peers, with the goal of increasing their participation and acceptance. The nondisabled students must seriously commit to this activity, and meet weekly to problem solve and brainstorm strategies for mediating the social relationships of their classmates with learning disabilities.

Speaking Skills Training

A wise man once said, "Never say anything that doesn't improve on silence." Unfortunately, students with LD often violate this adage. They may barge in on pri-

vate conversations, talk nonstop, not listen, talk only about themselves, interrupt with irrelevant tangents, and more. Teaching the following strategies can help:

1. *Wait time.* Being sure to listen carefully and follow along with the thread of the conversation is important. Students need to organize their thoughts before they speak. Teachers can be helpful by reinforcing students when they respond appropriately and control irrelevant or inappropriate comments.
2. *Rehearsal.* Students rehearse what they want to say to a teacher, friend, potential employer, or in a speech and receive feedback from the class. Strategies for using "inner" language to rehearse in real-life situations are encouraged.
3. *Interpersonal sensitivity.* Teachers can help students learn how their speech affects listeners and then model what makes a person interesting to listen to—including maintaining good eye contact and showing genuine interest in what others have to say.
4. *Feedback.* Teachers provide accurate feedback to students by sharing what they have observed, which behaviors affected peers in particular ways, and how they personally reacted to the behaviors they saw.

Building Self-Esteem

Everyone has a general sense of self-worth, which is made up of very particular self-esteems. When we intervene to raise a student's academic self-esteem, this may have some positive spillover on global self-esteem.

All of us have a general sense of self-worth, which is made up of very particular self-esteems: how we fare as students, athletes, singers, friends, artists, professionals, brothers, children, our physical attractiveness, and many more. When we intervene in school to raise a student's academic self-esteem, this may have some positive spillover on global self-esteem. However, increasing global self-esteem doesn't generalize in the opposite direction. In spite of the "don't worry, be happy" movement in recent years, people are smart enough to know that feeling good about oneself comes from having done well at some task, whether that's a hard-won B+ on a math quiz or a kind gesture toward someone in need.

Enhancing self-esteem among our students requires a targeted approach. Often students with LD are at a self-esteem disadvantage from the start. We are promoting *inclusive education*—including the disabled in general education environments and instruction—but research shows that when a student is in a scholastic environment in which the average student is academically superior, this results in lower academic self-concepts, lower grades, and lower educational and occupational aspirations. The activities suggested below can help to counteract this phenomenon, as can creating a cooperative rather than competitive class environment in which the emphasis is on mastery rather than grades, individuals' differences are valued, and social comparison is discouraged. Involving the whole class in a community service activity on a regular basis also can bolster social skills, self-esteem, confidence, and a sense of pride and belonging. And, of course, modifying and adapting the curriculum and assignments to ensure that a student can succeed is critical.

Modifying and adapting the curriculum and assignments to ensure that a student can succeed is critical to his or her self-esteem.

Directed Writing Activity. Teachers can encourage students to jot down their reactions to their daily lives in personal journals. Students are given time to write daily about their reactions to a positive and a negative event, and to focus on their own abilities and shortcomings. If the teacher reads the journals, issues raised can be followed up on through discussion with the student.

Q-sort. Students can sort descriptive adjectives into piles that represent their "existing" behavior and their "ideal" behavior. Students then select a behavior they wish to change and are reinforced for progress toward this goal.

Bibliotherapy. Often reading or listening to books in which the main character struggles with a dilemma in the student's own life serves as a superb counseling tool. The student learns how others have handled similar circumstances. An example of an excellent book that can help students feel that they're not all alone and strengthen their ability to cope is Sharon Flake's novel *Skin I'm In,* in which Maleeka, a teenager in an African American school struggles with ridicule for having darker skin and dressing in her individual style. *The Color Purple*'s theme is physical and sexual abuse; *Izzy, Willy, Nilly* deals with self-concept; *Julie of the Wolves* deals with resiliency; *The Solitary,* with self-determination; and so forth. Students dealing with similar challenges read a book revolving around that theme and discuss their feelings and ideas about the work with the help of a facilitator. The focus is on the characters and their dilemmas and coping strategies, rather than the student revealing his or her circumstances. This approach has assisted students in coping with stress, has helped build self-esteem and confidence, and improved student aspirations for the future.

Self-Determination Training. Many students with LD believe their lives are controlled by others and place the responsibility for their actions on someone else. "Peggy didn't sit with me at lunch because she's ashamed to be seen with me," a student might think. But a student who's been encouraged to accept more responsibility for his or her actions might say, "If I want to sit with Peggy at lunch, I'd better get there early enough so there's room for me at the table."

Role-playing and simulations can help students discover whether the locus of control is coming from outside or inside themselves. The value of internal control can be highlighted, and students can be supported as problems and action plans are identified. In one study, students learned to increase their math performance by using empowering statements: "I'm saying negative things that don't help. . . . I can stop and think more helpful thoughts." "Take it step by step." "I really did well in not letting this get the best of me." "Good for me! I did a good job!" (Kamann & Wong, 1993). Teachers can help a great deal when they give students opportunities for choice, model taking charge of one's destiny, help students attribute success to their own efforts, and positively reinforce motivation, self-esteem, and internal locus of control.

Self-determination skills are essential to overcoming learned helplessness and to making important decisions about the future.

Self-determination skills are essential to overcoming learned helplessness and to making important decisions about the future. Students who act according to their personal preferences and interests, make appropriate independent decisions about how to act in various situations (including safety and risk-taking), believe they can influence outcomes with their actions, set goals with appropriate plans to attain them, are good self-advocates, and who apply an accurate understanding of their strengths and limitations in making decisions are more likely to be employed one year out of high school, earn higher wages, have a bank account, and want to live independently. An important goal of schooling is to facilitate autonomy and the ability to govern one's life. You were introduced to Jeff and his frustrations in Chapter 8. Jeff's story continues on page 471. Jeff is the perfect example of how we

An important goal of schooling is to facilitate autonomy and the ability to govern one's life.

Jeff

A wonderful example of how we wish all students with LD would take charge of their lives.

Self-confidence (defined as belief in one's ability to influence events), persistence, and willingness to work hard are important contributors to success among young people with learning disabilities. Here, Jeff (a dyslexic adult whom you met in Chapter 8) describes how he went about getting into college:

In my last couple years of high school, the whole idea of college seemed incredibly out of reach. Everybody sort of had the attitude that "Well, you're a bright guy, but, you know college is just not in the works for you." But that never sat right with me. Maybe it was because my father is Dean of a university, but I don't think that's the only reason. I just had ideas about what I wanted to do in life and they were going to require that somehow or other I get a handle on using my mind. But I had no study skills, and even after five years of high school I could not write. I had no clue as to where a period went or what commas were for. I had sort of got reading understood, but writing was overwhelming . . . So my senior year wound down and out of the blue I decided to call the new headmaster of a boarding school for students with learning disabilities where I had gone for seventh and eighth grade. I introduced myself and told him I had been a student at the school, and I didn't have a good plan for next year. And he said, "Well, come on down and we'll talk about it." So I hopped on a bus and spent the weekend at this school and we threw around some ideas. And the plan we came up with was that I would work at the school as a janitor, and they would give me a small salary plus room and board and tutoring from the faculty so I could take courses at the local community college.

In my first semester at the college I took two courses. It was an incredible experience, because I really started to feel that "Hey, I can do academic things." I never had that academic confidence in high school. I don't think my school had a very good idea of where they were going academically, let alone where they were going with someone who had disabilities. There was no plan, and when they saw I wasn't making progress they just let me do whatever I wanted. So high school was pretty much a lost situation. But my two years at the community college were great. They changed the way I perceived myself as a thinker. I took basic writing—like a pre-college writing course—and I really enjoyed it. We talked about structure—things like an introduction, and argument paragraphs and a conclusion. I found out once I had a *system* for writing I could do it. Another good thing I learned was to have someone proofread so I got credit for what I was saying and didn't get an inordinate number of points deducted for misspelling every other word (this was pre-computer for me, so I had to type everything out, which was a remarkably cumbersome process). I started getting A's and B+'s and learned that I could think, and that made me more confident. I liked working at the boarding school, too. The next year they gave me a position as a dorm master; I lived with thirty kids. They were all learning disabled one way or another and some had been so protected by their environments—well, they all had low self-esteem but some were completely incapable of handling basic tasks, like how to make a bed or get your shoes on the right feet or take a shower. So that was challenging, but I felt good because I could identify with these kids and the incredible satisfaction they got from learning to do things on their own. . . .

Then one of the teachers at the community college who had worked with me a lot suggested, "You know, you ought to apply to some four-year colleges." We wrote away and got some applications to some great schools. A lot of them seemed pretty overwhelming but I sent several in and went to one interview, which was actually very useful. I mean, a lot of students going through high school have everyone grooming them for college, but I

(continued)

Jeff (Continued)

had no clue. So this interviewer gave me a lot of tips about the application process, which was great. Still, I did not get into this very selective small college I wanted. When I got the rejection letter, I called the Dean of Admissions and I just said, "I'd like to drive there tomorrow and review my application with you." And to my total surprise he said, "Sure, what time will you be here?" So I met with him, and explained really simply that I had worked harder to have the opportunity to just sit down with him than any other student he would be accepting this year, and that no matter how carefully he screens all those applications somebody is going to drop out. So what did he have to lose? The worst thing that could happen was I would be one of those . . .

Anyway, halfway through the summer I got a letter from the college. And they accepted me.

Source: Interview by Jennifer Kagan.

wish all students with LD would take charge of their lives. Because of his belief in himself and his willingness to act on this belief, Jeff graduated from a highly competitive college and today is a successful computer programmer—and a wonderful advocate for his three little girls who are nonreaders.

Assertiveness Training

Assertive people are open, honest, direct, and spontaneous—but approriate, positive, and respectful—in their communications with others. Nonassertive students often get hurt because they allow others to shape their goals.

Assertive behavior is honest and straightforward expression to others and to ourselves about how we feel. Assertive people, students included, make their own decisions, and from this gain a great deal of self-satisfaction. They are open, honest, direct, and spontaneous—but appropriate, positive, and respectful—in their communications with others. With assertiveness training students learn to feel better about themselves and less anxious about sharing their feelings and ideas. By contrast, nonassertive students often get hurt because they allow others to shape their goals. The essential components of assertive behavior include

1. Good eye contact, appropriate body language, and a facial expression consistent with what's being said—for example, not smiling when you're really dissatisfied.
2. Spontaneous reactions to others' actions, but timing comments judiciously.
3. Honest communication about what one feels—"I am angry because you broke my watch" as opposed to "You are so clumsy!"
4. Matching the intensity of one's response to the situation—for example, not blowing up when someone bumps you in line.

When reinforced by the teacher, these skills can help markedly in boosting a student's self-esteem.

Summary

Gaps between the basic achievement levels of students with learning disabilities and their peers generally widen at the middle and high school levels. Added to the tremendous pressure to "cover the curriculum" in these years, learning can be a frustrating and uphill battle for many students. If still motivated to continue remedial programming in reading, mathematics, and written language, these efforts can be quite successful, especially given the spurt in learning ability experienced by some teenagers. Basic skills also can be reinforced in the context of content area instruction. Curriculum adaptations and accommodations are critical in the secondary school years to help students with LD succeed in content area classes.

Teachers need to help students develop ways to compensate for their continuing weaknesses so as to minimize the interference with life success. Most importantly, strengths need to be developed, social skills and self-concept must be built, content needs to be made accessible to these students so their thinking and reasoning abilities are nurtured, and the student must be prepared for the transition to postsecondary schooling, employment, and independent living.

All this is not easy to plan and implement given the curriculum's demands and the great social and emotional changes experienced during the teenage years. Positive progress is most likely when teenagers understand their learning needs and become actively involved in their academic planning. Both the teacher and the family have the responsibility to attend as much to the teenager's affective and social development as to their academic development because success in life is linked far more to how we ultimately feel about ourselves than to our academic or intellectual levels.

Helpful Resources

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