

10 Reconciling Readers and Texts

Elizabeth Flynn
Michigan Technological University

When asked to list the reading problems of their students, teachers frequently mention that students do not read analytically, cannot distinguish between important and unimportant ideas, cannot adjust their reading to the different materials they encounter, do not seem to enjoy reading, and hence approach texts unenthusiastically. Some teachers admit that their students do not read assignments at all but rely, instead, upon class discussion or lecture.

The subject of student reading problems is guaranteed to produce emotion-charged discussion. Teachers invariably express enormous frustration because student reading problems interfere so seriously with their mission as educators and yet seem so elusive. Unlike writing problems, which make themselves embarrassingly visible, reading problems often take longer to detect and are harder to diagnose. The silence and invisibility of the act of reading make it appear a mysterious process, especially to the nonspecialist faced with lethargic students.

Perhaps because they lack a better explanation, teachers often assume that reading problems are caused by laziness—students have no self-discipline. If the cause of the problem is laziness, then the solution would appear to be firmness—more quizzes, heavier reading assignments, harder exams. However, such measures are often counterproductive. Students usually do not read well because they are unable to integrate what they read with what they already know about the world. They lack the context necessary to process the material they encounter. Often the cause of the problem is not laziness but an incompatibility between readers and the texts they are asked to read.

In order to convince a group of Michigan Tech faculty that reading is as much a matter of bringing meaning to a text as extracting meaning from a text, I asked them to read the following passage:

Menyuk (1971) has laid out the Jakobsonian courses of feature differentiation in a tree diagram (see Figure 5-2). This shows that the first distinction occurs on the feature vowel-consonant. Vowels

are differentiated on the feature-wide, consonants on oral-nasal. The reader's attention is called to Figures 2-1 and 2-2, which diagrammed the hierarchical organization of Roman capital letters. Though the two domains subjected to a distinctive feature analysis—sounds and letters—are different, it is important to notice that the general model for analysis is the same and the general forms of the outcomes are similar.¹

The faculty members, who were participating in a three-hour "Reading-across-the-Curriculum Workshop" and who were unfamiliar with reading theory and with linguistics, were baffled. Some refused to read the passage at all; others expressed anger. Not one was able to paraphrase the paragraph. The reason, of course, was that they had no context within which to place the concepts being discussed. They had never heard of Jakobson, knew nothing of "feature differentiation" or "feature analysis," and were puzzled by technical terms such as "feature-wide," and "oral-nasal." They also lacked the immediate context of the passage. Had they had the preceding paragraphs, or at least the figures referred to, they might have been able to make some sense of it. We analyzed the sentence structure and decided that the difficulty of the passage was not a result of convoluted sentences or sophisticated constructions. Indeed, the passage would not have been difficult at all for someone conversant in linguistics who had read the preceding paragraphs and who could refer to the diagrams.

Reading materials students are assigned are sometimes as disorienting to them as the above paragraph is to the nonspecialist. If students lack the necessary background or the necessary vocabulary, they will be unable to derive meaning from texts that are reasonably straightforward to someone knowledgeable in the field. Their minds will wander when they read; they will become frustrated; they will perhaps fall asleep; in other words, they will show signs of "laziness."

Frank Smith, in *Understanding Reading*, makes clear the importance of the background of the reader in making sense of written material. He says, "Whatever readers perceive in text(s)—letters, words, or meanings—depends upon the prior knowledge (nonvisual information) that they happen to bring and the implicit questions they happen to be asking."² According to Smith, this process of deriving meaning involves both prediction (asking questions) and comprehension (answering questions through interaction with a text).³ The reader, then, is actively involved in creating meaning: prior knowledge predisposes a reader to ask particular questions of a text, and comprehension results when the text yields answers to those questions.

Other theorists emphasize that the "background" of a reader includes not only knowledge of subject matter and knowledge of lan-

guage as it does for Smith,⁴ but also emotional association as well. Louise Rosenblatt, for instance, in *The Reader, The Text, The Poem*, calls the transactions between reader and text an "event," a word which emphasizes the experiential nature of the encounter. She says, "The reader's attention to the text activates certain elements in the reader's past experience—external reference, internal response—that have become linked with the verbal symbols."⁵ For Rosenblatt, the interaction between reader and text is a result not only of previously stored information, but also of past experience, including "internal response." The totality of a person's history affects the nature of the reading event.

The reading process Smith and Rosenblatt describe resembles the process James Britton sees as characteristic of all learning. In his essay, "Language as Experience," he speaks of learning as a matter of constructing a representation of the world based on past experience and generating expectations of the future on the basis of this representation, expectations which enable us to interpret the present.⁶ Britton's expectations are Smith's predictions—the questions we have about an uncertain future. We come to understand the present (or the text) by posing questions which grow out of our past experience. Those questions are answered as the future becomes the present, or as prediction is modified by the text itself.

Everyone needs to make sense of the present in order to reduce uncertainty. We cannot function without asking questions and finding answers through interaction with the environment. Motivation to read is therefore present in everyone. If readers are not gaining meaning from texts, then those texts are probably inappropriate for those particular readers; they provide no satisfying answers, or the answers they do provide cannot be comprehended. Teachers determined to provide meaningful reading experiences for their students will select their reading materials carefully, use them effectively, and make use of writing to make reading more purposeful.

Selecting Materials

For most teachers, selecting appropriate materials means selecting appropriate textbooks. The standardized text expediently provides information about a variety of topics in a relatively economical way and is especially useful in large classes where individualized reading assignments are an impossibility. The textbooks most beneficial to students provide a balance of familiar and unfamiliar material; they are at once accessible and challenging. The mix of unfamiliar material with the familiar is desirable, of course, because the textbook should be a way

to new knowledge. Reading material should be aimed at what Lev Vygotsky calls the "ripening functions"; it should "march ahead of development and lead it."⁷

Texts suited to the instructional level of most students in a class are best. A useful method of determining the readability of a text is the cloze procedure (see chapter 9). Another approach is to ask students themselves for an evaluation of texts. After students have been using a book for a few weeks, an instructor can ask them to write an informal critique of it. If they are finding it too difficult or too uninteresting, modifications in future reading assignments can be made. Instructors can also ask for formal or informal evaluations at the end of the term and can use the information to make changes in materials or assignments in subsequent terms.

But even texts selected to suit the majority of students will be inappropriate for some students, since in all classes there will be a range of interests and aptitudes. A solution is to use several different texts. One professor of biological sciences at Michigan Tech, for instance, has experimented with using two different books in his introductory physiology course. His class consisted of more than one hundred students comprising three distinct groups—nursing students, medical technology students, and engineering students. In an attempt to meet the needs of these different groups, he selected two different textbooks, one easier than the other. Students were free to select either text, and all took a common examination at the end of the quarter. The instructor was pleased with the results of his experiment—he had fewer complaints about the textbook and felt satisfied that his course was tailored more closely to the needs of his students. In her essay, "Reading: A Hot Issue for a Cool Librarian," Sylvia Marantz encourages all teachers to "move beyond the single standard text in an effort to find that proper balance, that right discrepancy for each level."⁸

The selection of appropriate textbooks is difficult because texts must meet the needs of a variety of students and because they must be adapted to course structures for which they are rarely ideally suited. The selection of a textbook is often a compromise, as is illustrated by the experience of professors in the Mathematical and Computer Sciences Department at Michigan Tech. The text being used in the department's introductory calculus sequence was unsatisfactory because it was too difficult for most of the students taking the course. Teachers were hesitant to select a different text, however, because the one they were using included a section on linear algebra, while the more readable textbooks they were considering did not. After much debate, they decided to select an easier text and to write their own supplement on

linear algebra. The solution is not ideal; the new text has its problems. But teachers and students generally agree that the new materials are an improvement over the ones formerly used because they are more readable.

Textbooks sometimes make for tedious reading because they tend to provide only conclusions and convey little sense of the scholar's or researcher's excitement while developing the subject. They sometimes give students the impression that disciplines are rooted in codified dogma rather than controversy. When possible, therefore, textbooks should be supplemented or replaced by materials which will be more involving. Case studies, journal articles, collections of documents, biographies, and autobiographies are usually more successful in engaging students in the problem-solving process, which is the active center of all fields. The epistolary controversies found in most professional journals, for instance, are often intriguing and convey "subject matter" in a way that might be refreshing to students. Such exchanges demonstrate that authorities often disagree about facts, about methodology, and about fundamental assumptions. Students learn to look at material with a greater critical distance. They begin to see that conclusions are best understood in relation to the assumptions and methodologies which lie behind them; they learn to recognize the problem-solving process which is inherent in the knowledge they are asked to master.

Textbooks, journal articles, case studies, collections of documents, biographies, and autobiographies are written in what James Britton calls the "transactional" mode—the language to get things done: to inform, or to advise, persuade, or instruct.⁹ Where possible, students should also be provided reading materials written in the "expressive" mode—language used for the purposes of exploration and discovery. Journals, diaries, and personal letters reveal the private dimension of productive activity. Students of biology, for instance, will no doubt be impressed by the delight Darwin took in seemingly trivial findings as described in his journal. Students struggling with the novels of Virginia Woolf might appreciate passages in *A Writer's Diary* which describe her difficulties in composing the novels. Expressive materials such as these serve to demystify knowledge. Students can be easily intimidated by the polished prose of transactional writing. If they are introduced to writing of the professionals which is unfinished and meandering, they will be better able to accept their own imprecision and uncertainty as well as appreciate the process whereby precision in language is achieved. Ken Macrorie in *Searching Writing* discusses the benefits students can derive from viewing the exploratory processes of the "experts." He says, "if students were to see the experts at work—

finding needs in their own lives and answering them, working brilliantly, working stupidly, making mistakes, stumbling into profitable answers—they would understand the true nature of productive men and women, and would come to believe that they might become such people themselves.”¹⁰

Using Materials

Expressive and transactional reading can be used in very different ways. Usually, students will read diaries and letters without prodding because the materials themselves are engrossing and accessible. It is probably not necessary, therefore, to prepare students for such reading or even to assess their comprehension of it. Students might simply be asked to keep a reading journal in which they respond to their reading in some meaningful way. By examining these journals from time to time, teachers can quickly and easily provide feedback on student reading. Transactional materials present more problems, however. Such materials are, by definition, further removed from personal experience and so more difficult to comprehend. A useful approach is to employ both prereading strategies and reading strategies as a way of insuring that students bring an appropriate context to their reading.

Prereading Strategies

Preparation for reading transactional materials can take a number of different forms. Teachers might introduce students to material by pointing out its specific features; go over difficult vocabulary and graphics encountered in reading; have students write journal entries on topics to be covered in reading; lecture on material before students encounter similar material in a textbook; conduct discussions of material in advance of asking students to read about a particular topic, or allow students to discuss the topic in small groups; provide study questions.

The very appearance of textbooks can intimidate students; chapter headings and subheadings may appear unfamiliar and threatening. Instructors can lessen student resistance to new materials by introducing them to the text, pointing out useful aids such as glossaries and study questions, providing information about the author and explaining how the text will be used in the course. Margaret Pigott in “Who’s Afraid of the Wicked Witch? Reading for College Students,”¹¹ recounts her experience teaching an essay from *The New Republic*, a periodical which, she discovered, was unfamiliar to most of the students in her honors composition class. She lessened their anxieties by having them

leaf through an issue of the magazine, feel the texture of the paper, look closely at the pictures and advertisements, and examine the organization of the entire magazine.

It is often helpful, too, to introduce students to difficult terminology before they encounter it in a text. If textbooks do not provide glossaries of terms, teachers can prepare their own, or have students look up words they anticipate will give them difficulty. Richard Muelder in "Reading in a Mathematics Class" suggests that glossaries which students create can be organized into units so that words can be readily located. Writing definitions of words, Muelder feels, increases the retention of meaning.¹²

Teachers can also discuss graphs and charts that students will encounter in forthcoming chapters. Graphics are meant to complement printed material, but students will frequently ignore them if they appear complicated or if no one has taught the students how to read them. One approach is to have students convert graphs or charts into written explanations. The activity of writing about visual information will help students to develop ways of understanding it and enable teachers to identify problems students are having.

Writing can be used as a prereading strategy in other ways as well. Students can be asked to explore topics in journals before they read about them in their texts. Students in an introductory psychology course, for instance, might be asked to prepare for a chapter on Freudian psychology by explaining to themselves their present understanding of Freud's theories in their journals. The process of writing will trigger associations and bring to the surface a context which had previously been dormant. Journal entries may be written in class or at home and can address questions which are either directive or open-ended.

Another way of preparing students for their reading assignments is to lecture on material before it is encountered in a text. The lecture will make students more receptive to the ideas contained in assigned reading and will alert them to topics the instructor thinks are especially important. It will provide a context for reading. Students of American history, for example, will have an easier time with a chapter on the Great Depression if they are provided an outline of significant occurrences of the era beforehand. If students understand that they will have to make use of knowledge derived from their reading in postreading activities such as essays or discussion, they will be unlikely to use the outline or other study aid as a substitute for careful reading of the chapter itself.

Discussions conducted prior to reading serve a similar purpose. The exchange of ideas will produce unanswered or partially answered

questions, and students will be motivated to read their texts carefully in order to find answers to those questions. Small group discussions have the added advantages of allowing for the participation of a greater number of students. Like the activity of writing in a journal, involvement in a discussion activates the memory and so allows already existing knowledge and interests to surface. In conversation, students also have the benefit of a responding audience and can receive immediate feedback on their ideas. The activity of conversing is good preparation for the much harder task of communicating with absent authors, who have only the printed page to convey their silent messages.

Study questions are another useful form of preparation. A few carefully selected questions will help students focus their reading and distinguish between significant and insignificant detail. Questions might reflect what Benjamin Bloom calls the three levels of comprehension: the literal level (what the passage says); the interpretive level (what it means); and the applied level (how it relates to other knowledge).¹³ Before asking students to read Emily Dickinson's poem, "The Mountains Grow Unnoticed," for example, it might be useful to give them questions which will test all three levels of comprehension. Students might be asked to explain the nature of the contrast established by the poem (literal level); to explain why the mountains are said to have "eternal faces" (interpretive level); and to discuss ways in which the treatment of the sun in this poem differs from the treatment of it in poems previously studied (applied level). Answers need not necessarily be written out. Often the questions alone are enough to direct reading in fruitful ways.

Questions can help students better understand science texts as well. A passage on Newton's first law of motion, for example, will no doubt be read more meaningfully if students are provided study questions in advance of their reading it. Students might be asked: What is needed in order to vary either the speed or the direction of the motion of an object? (literal level); What might be some examples of an "unbalanced force"? (interpretive level); How does Newton's first law of motion help us explain the concept of centrifugal force? (applied level). The kinds of study questions provided can be determined by the sophistication of the students. Less able readers can be given a preponderance of questions on a literal level whereas advanced students will be better able to handle questions on an applied level.

Other ways of insuring that students bring the necessary background and interest to their reading include using audiovisual materials such as films, tapes, slides, and recordings. Field trips can serve a similar purpose. All of these approaches create a context for reading and stimu-

late interest so that assignments are approached with eagerness rather than lethargy. It is important to remember, however, that all of these approaches may also be effective *as* students are reading or *after* they have read. Students who have sufficient knowledge to handle material and who are highly motivated should not be restrained from reading. Prereading strategies are necessary only when background or motivation are deficient.

Reading Strategies

In addition to preparing students to read particular assignments, teachers can also teach students skills which they can apply to a variety of different materials in a variety of different situations. Teachers in all disciplines can take time out from their normal activities and teach students ways of handling unfamiliar vocabulary and ways of analyzing passages.

Vocabulary

Students can be taught to use context clues in order to determine the meaning of words. Such cues can be either syntactic or semantic. Syntactic cues include the placement of the word in a sentence, the form in which the word is presented, and the signal words attached to it.¹⁴ Students can determine the part of speech of a word from syntactic cues and such information can aid in predicting meaning. In the sentence, "The microphone is an audio transducer, converting electrical signals into sound waves," for example, the syntax of the sentence tells us that "transducer" is a noun. Three clues are useful in determining the part of speech of the word: (1) The "er" suffix is often a noun ending; (2) the word's positioning after the verb "is" suggests that it is either a predicate nominative or a predicate adjective; (3) the article "an" eliminates predicate adjective as an option, and so the word must be a predicate nominative or noun. Semantic cues can aid further in determining meaning. The word "transducer" is surrounded by other words which limit it semantically. We learn from the sentence that a microphone is a kind of transducer, one which converts electrical signals into sound waves, and so we infer that transducers are converters of sorts.

Students can also be taught to determine the meanings of words by analyzing their structures. If we examine the components of the word "transducer," for instance, we see the prefix "trans," which means "across," and the root, "duce," which derives from the Latin "ducere," which means "to lead." This information supports our contention

that transducers convert or lead electrical signals from one system to another. A useful tool in analyzing the structure of words is Borror's *Dictionary of Word Roots and Combining Forms*.¹⁵ Such a work is most helpful if students learn to use it as they encounter difficult words. Isolated exercises on the meanings of word parts are not likely to enhance vocabulary development.

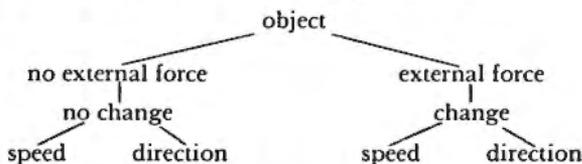
A dictionary is indispensable to vocabulary enrichment, but many students do not know how to use one. They are confused by the pronunciation key, by information about word etymologies, and they have little faith that a dictionary will solve their spelling problems. Teachers can show students how to use a dictionary by using it frequently as new words are encountered in class. They can demonstrate that a dictionary is most helpful after context cues and word structures have been examined. The dictionary can substantiate hunches about meanings or spellings which have resulted from different analytical methods.

Analysis

Frequently students also need help in learning to analyze the material in their textbooks. They often have difficulty determining the main idea of a passage or distinguishing between main ideas and subordinate ideas. One way of assessing students' ability to recognize hierarchical relationships is to isolate a passage from a textbook (a page or two), read it aloud, and ask them to paraphrase it. If they do so inadequately, they need help in interpreting material.

A solution is to isolate a paragraph from a passage and have students identify its main idea and relate that main idea (stated or implied) to other ideas in the paragraph. They can demonstrate those relationships graphically through the use of a tree diagram (see chapter 3) or an outline. A visual representation helps students conceptualize hierarchical relationships and helps teachers identify reading difficulties. Newton's first law of motion, for instance, might be tree diagrammed as follows:

Newton's first law of motion is: Every object continues in its state of rest or of uniform motion along a straight line unless it is compelled by an outside force to change that state.



After students have learned to analyze paragraphs, they might then be encouraged to analyze entire essays. The instructor might demon-

strate the approach by putting a diagram of an essay on the board, being careful to explain relationships fully. Students might then analyze an essay of their own choice, either on their own or in small groups. Frequent repetition of this practice enhances students' ability to condense large units of writing into a few key concepts and also to identify the relationship between key concepts and other less essential material. The result should be more efficient reading.

Entire books can be examined analytically, as Mortimer Adler and Charles Van Doren illustrate in their *How To Read a Book*.¹⁶ Part Two of the book, entitled "The Third Level of Reading: Analytical Reading," suggests procedures that elaborate the idea of identifying the central thesis of an essay. Adler and Van Doren recommend "pigeonholing a book" (classifying it), "x-raying" a book (identifying its central theme), identifying key terms, identifying propositions which make up arguments, and criticizing a book fairly. These various activities represent the most advanced level of reading. Mastery of them is a sure sign of maturity and independence.

Analytical skills can be reinforced through the use of texts designed to teach reading. Anne Eisenberg's *Reading Technical Books*, for instance, focuses on the analytical skills useful in technical courses. In addition to chapters on building technical vocabulary skills and on using a textbook effectively, it has chapters on frequently used patterns, such as examples, contrast, and cause-effect, and a chapter on "Writing Out Main Ideas." Donald E. P. Smith's *Learning to Learn* introduces students to the "SQ4R" method of reading—predicting meaning by surveying material, formulating questions about it, reading it, answering questions on it, writing questions and answers on the material, and reviewing it. The approach involves prereading, reading, and post-reading strategies: concepts are assimilated through repetition and reinforcement.¹⁷

Writing and Reading

Carefully integrating writing and reading assignments can also have a positive effect on student reading. Prereading strategies are helpful in preparing students for reading assignments; reading strategies are useful as students are reading difficult material; writing assignments are helpful in clarifying what has already been read. Through writing, students gain a fuller understanding of their reading. Writing assignments can range from informal journal entries to formal research papers. In all forms, writing forces readers to define ideas clearly and so results in fuller comprehension. Writing necessitates rereading and rethinking. Material is not simply ingested; it is digested.

Several professors of biological sciences at Michigan Tech have successfully integrated reading and writing assignments in order to prepare students to write effective lab reports. The procedure they employ, which involves critiquing an article from a professional journal, has resulted in lab reports which reflect an understanding of the nature of scientific discourse. Students first analyze an article from a professional journal selected by the instructor for its accessibility to undergraduates. The analysis, which is done during the lab session by students working in groups of three or four, is followed by a critique of the article by the instructor. Next, written critiques of an article selected by one of the members of the student group are prepared and then shared at the lab session. Classmates provide feedback; the papers are revised and submitted to the instructor for a grade. The approach introduces students to the relationship between scientific methodology and scientific writing. Students learn that discussions of scientific data are not simply accumulations of factual data but, rather, carefully integrated analyses of causal relationships. After students have grasped the formal characteristics of scientific writing, especially the way in which data are analyzed in the discussion section of a journal article, they are ready to prepare their own reports.

Research papers are another potentially useful writing assignment which can aid in reading development. Such papers provide an opportunity for students to explore a topic on their own, usually one which interests them, and to select their own reading materials. The assignment would seem to encourage active reading because students themselves make so many of the decisions which have a bearing on the reading they will do. Only very advanced readers are able to handle the freedom provided by the research paper assignment, however. The multiplicity of potentially useful texts can be overwhelming. Each document must be read, analyzed, evaluated, and then related to other data. The process involves highly sophisticated cognitive activity.

Writing can help students make sense of their research. It is useful early in the project, for instance, to have students define the process they have employed thus far. They can describe the sources they have consulted; they can defend the decisions they have made about those sources; and they can express their frustrations. Such papers can be extremely useful to instructors anxious to make the project as meaningful as possible. Teachers can reward students who seem to have their research under control and suggest materials and strategies to students who are frustrated. These papers need not be graded since they are best conceived of as expressive (exploratory) rather than transactional writing.

It may also be helpful to simplify the research process by dividing it into stages and requiring students to write several shorter papers rather than a single long paper. Many research papers employ a problem-solving format. The first part of the paper defines a problem and the second suggests solutions to those problems. If students write a short paper focusing on the problem definition, receive feedback on this paper both from the instructor and peers, and then revise it, they will be better prepared to proceed to the second stage in the process, the exploration of solutions. Their subsequent reading will be more focused because it will be more purposeful; research conducted after the problem has been defined will serve to confirm or refute a carefully worked out hypothesis. After students have received feedback on the second part of their paper, they are ready to revise the entire paper. Their writing will have helped them select their materials and also analyze and evaluate those materials.

In a literate society, reading is an indispensable way of making sense of the world. Motivation to read will be high if the printed word promises clarification of the environment—reduction of uncertainty and doubt. Most students are neither lazy nor recalcitrant. They resist that which cannot be integrated with past experience and embrace that which yields new insights. An important charge of teachers of all disciplines is to eliminate barriers to reading by reconciling readers and texts.

Notes

1. Eleanor J. Gibson and Harry Levin, *The Psychology of Reading* (Cambridge, Mass.: The MIT Press, 1975), p. 115.

2. Frank Smith, *Understanding Reading*, 2nd ed. (New York: Holt, Rinehart and Winston, 1978), p. 158.

3. Smith, p. 66.

4. Smith, p. 5.

5. Louise M. Rosenblatt, *The Reader, The Text, The Poem: The Transactional Theory of the Literary Work* (Carbondale: Southern Illinois University Press, 1978), p. 11.

6. James Britton, "Language as Experience," in *Language as a Way of Knowing: A Book of Readings*, ed. Martin Nystrand (Toronto: The Ontario Institute for Studies in Education, 1977), p. 39.

7. Lev S. Vygotsky, *Thought and Language*, ed. and trans. Eugenia Hanfmann and Gertrude Vakar (Cambridge, Mass.: The MIT Press, 1962), p. 104.

8. Sylvia Marantz, "Reading: A Hot Issue for a Cool Librarian," in *Fusing Reading Skills and Content*, ed. H. Alan Robinson and Ellen Lamar Thomas (Newark, Del.: International Reading Association, 1969), pp. 122-123.

9. James Britton, Tony Burgess, Nancy Martin, Alex McLeod, and Harold Rosen, *The Development of Writing Abilities (11-18)* (London: Macmillan Education, 1975), p. 88.
10. Ken Macrorie, *Searching Writing* (Rochelle Park, N.J.: Hayden Book, 1980), preface.
11. Margaret B. Pigott, "Who's Afraid of the Wicked Witch? Reading for College Students," *Journal of Reading* 23 (1980): 534-538.
12. Richard H. Muelder, "Reading in a Mathematics Class," in *Fusing Reading Skills and Content*, p. 78.
13. Benjamin S. Bloom, ed., *Taxonomy of Educational Objectives: Cognitive Domain* (New York: McKay, 1956).
14. Harold L. Herber, *Teaching Reading in Content Areas*, 2nd ed. (Englewood Cliffs, N.J.: Prentice-Hall, 1978), p. 143.
15. Donald J. Borror, *Dictionary of Word Roots and Combining Forms* (Palo Alto, Calif.: Mayfield Publishing, 1960).
16. Mortimer J. Adler and Charles Van Doren, *How to Read a Book*, rev. ed. (New York: Simon and Schuster, 1972).
17. Other useful textbooks include: Donald E. P. Smith, ed., *Learning to Learn* (New York: Harcourt Brace Jovanovich, 1961); Martha Maxwell, *Skimming and Scanning Improvement: A Program for Self-Instruction* (New York: McGraw-Hill, 1969); Alton L. Raygor, *Reading for Significant Facts* (New York: McGraw-Hill, 1970).