Teachers can help students develop abilities to enable them to read subject-oriented materials with better understanding. The purpose is not to conduct a lesson in reading comprehension, but to establish purposes for reading, develop word competency, search for surface and deeper meanings, and evaluate information and ideas gained through reading. Teachers can promote purposeful reading by providing suitable motives which students can discuss and weigh. Problem solving can eliminate teacher inspired purposes. The ability to grasp context clues and morphemic clues and to distinguish between literal and figurative meanings, and the study of multiple word meanings and the dictionary can help build better vocabulary skills. The ability to see relationships among ideas, to understand paragraph and other organizational patterns, and to discover meanings and relationships by analyzing sentence patterns are important measures of comprehension the teacher can help students develop. Helping students discover inferential meanings involves thinking about other ideas the messages might convey. Finally, the student's ability to judge accuracy, distinguish between fact and opinion, recognize qualification, and perceive persuasion can be accomplished by studying information obtained from several sources. (HS)
"Developing Comprehension Skills in the High School Student"
Session: May 3, 1972 2:00-3:00 P.M.

At the outset, each of us should be clear about the messages the topic of this presentation conveys. Teachers do not improve the comprehension of their students. Instead, they help students develop abilities that could enable them to read with better understanding the information and ideas conveyed by authors of subject-oriented materials in literature, science, social studies, mathematics, health, home economics—in short, the books and reference sources, the newspapers and magazines they will be reading in and out of school. Moreover, weaknesses in comprehension which may be overcome through instruction have their origins in different sources. Therefore, diagnostic teaching requires that these be identified so that efforts to modify student behaviors will have a fair chance to succeed.

Teachers will not conduct a lesson in reading comprehension; instead, they will concentrate as the case may dictate on learning to establish purposes for reading, develop word competency, search for surface and deeper meanings, and evaluate information and ideas gained through reading. To these we might add learning to locate, master, and retain information. Thus we can establish discrete but related goals based upon established requirements and offer lessons to help students achieve them.
At this point it might be useful to differentiate between teacher guidance which is intended to help students read with greater comprehension those materials which serve current requirements and instruction that has as its long-term goal the development of skills and attitudes that will serve students' recurring needs. Thus, for example, when a teacher introduces difficult and unfamiliar vocabulary in advance of close reading, this meets the former purpose. When he requires that students justify conclusions purportedly based on stated information, he could be developing long-term behaviors. Naturally, many strategies that help students overcome obstacles to comprehension might fulfill both objectives.

Establishing Reading Purposes

Reading with a purpose is more efficient than reading without one. Students who read for specified reasons will be thinking as they are reading and not merely receiving information that they are supposed to consume. The active reader has a problem he wishes to solve, but the passive reader is merely a receptacle for facts.

Many high school students report that they have trouble concentrating as they read assignments. They think about other matters, and the result of all this is to understand less and remember little. Students who have a purpose for reading are bound to accomplish more than others who fail to identify any. Purposes serve to stimulate thoughtful reading. Teachers can promote this kind of reading by providing suitable motives which students can discuss and weigh. Readers who are exposed to such stimulation are more likely to ask themselves questions such as "What shall I look for?" and "How shall I read this material?" before beginning to read on their own than if they usually study in a setting which merely requires coverage of "the next ten pages" to be followed by discussion or a quiz.
Purposes for reading in subject areas do not always have to be teacher inspired if students are involved in solving problems that are thought provoking and challenging. The very nature of the problems approach to learning encourages students to formulate questions. Thus, if a group in a history course were evaluating the effects of our foreign policy vis-a-vis the "third world" nations, they could establish the boundaries or framework that would elicit relevant information: What is our foreign policy toward the "third world?" How has this policy affected the politics and economies of these countries? Is this policy consistent with our declared positions on international cooperation and assistance? These and related questions serve as the purposes for which students will read in order to gather sufficient information for resolving the basic problem.

The preview technique which is part of the well-established SQ3R plan of study is another means by which students can develop their own purposes for reading. By reading the chapter introduction or introductory paragraphs and reflecting upon the information to be covered they can begin to relate what they know to the content they will be reading about. Thinking about the subject serves as a stimulant to productive reading; it also can help students to identify areas on which they might concentrate. Chapter subheads and illustrative materials provide additional insights into the nature and treatment of the content; both may suggest purposes for which reading will be undertaken. Students can be taught how to convert subheads into one or more questions. In biology, for example, Controlling Harmful Plants might be the subhead. This subhead might elicit purposes for reading in the form of questions such as: What types of plants are harmful? Why are these plants judged harmful? What measures can be taken to control them?
Summaries usually contain general statements which the text clarifies. These too can become springboards for careful study. This survey - the examination of introductions, organizational features, and summaries - will enable students to obtain an overview of a problem; it also will provide a set for study.

Developing Vocabulary

Aside from technical words, there is a general vocabulary identified with all content subjects. Teachers are familiar with the problems that these words, let alone the latter, cause - meanings that are only vaguely understood and generate ideas that have little relationship to the context. Studies show that all other conditions being equal, knowledge of word meaning seems to be the most important single factor that accounts for variability in reading comprehension.

It is not realistic to assume that we can teach students all the words they need in order to read with understanding. A much better strategy is to teach them how to use their own and other resources in treating unfamiliar vocabulary. These include awareness of contextual and morphemic clues, multiple word meanings, figurative language, and dictionary usage.

To effect the greatest utilization of contextual aids, passages that represent typical types - experience, mood, definition, explanation, comparison, contrast - could be analyzed to discover relationships between the context clues they contain and the meanings of known and unfamiliar words. Once these relationships are established, students would be able to apply this knowledge to new words in other settings. It is important, however, for students to realize that context clues do not always provide solutions to word meaning problems and that they will have to look elsewhere for them.

Morphemic clues, with or without context clues, might be sources of help. These are the clues contained in words themselves - roots, prefixes and suffixes,
compound word parts. Students can learn how to use the meanings that these convey by studying them through known words in context and later dealing with these morphemes in new words. This procedure is superior to one which offers long lists of word parts whose meanings students are expected to memorize and apply.

Helping students to distinguish between literal and figurative meanings of words will not be difficult if throughout their reading activities they have been encouraged to search for deeper meanings. Students will have heard and used figurative language, and these familiar expressions could be used to develop awareness in and reactions toward words treated in special ways. Most efforts of this nature would be reserved for times when students are reading materials that contain them.

The study of multiple word meanings and the dictionary could be combined. If context and morphemic clues were lacking, students would have to rely upon the dictionary to sort out the meaning of words that might be understood in one contextual setting but not in another. A simple way to help students ascertain appropriate meaning is to have them substitute different dictionary meanings for the unknown words and then decide through discussion which fit the context best. It might be necessary on occasion to reword the dictionary meaning so that the substitution does not produce an awkward statement.

Recognizing Relationships (Literal)

One measure of comprehension is the extent to which the reader sees relationships among ideas or how ideas go together. The ability to understand is increased by his perception of the structure which ties a group of sentences together or the recognition that no firm structure exists. Students who look for and recognize patterns of organization will begin to think
about ideas as the author did. The closer the reader follows the author's thoughts, the greater will be his comprehension of them.

Paragraphs are organized in different ways. One type of organization serves to unify ideas that are closely related by expressing them in a distinct structure or format. The ways in which these ideas are expressed to convey their association is time order, enumeration, cause-effect, comparison-contrast. A fifth structure, topical, may be discerned within each of the others. A second type of organization is used by authors to express functions. It is exemplified by paragraphs that introduce a reader to a subject, illustrate ideas that have been expressed in order to clarify them, bridge gaps between ideas, and finally, summarize important points.

We can help students perceive the structure that writers use to give form to their ideas. A suitable way to do this is to cause them to think about the contents in specified ways by having them respond to questions which emphasize relationships. Thus, if students were tracing the developments that led to the discovery of photosynthesis, we could stress time order relationships through such questions as: Approximately how long did it take scientists to discover and understand the process? Upon whose earlier studies did base his experiments? If we were to ask students to read in order to find out what a given scientist discovered about the process, we would not be directing their attention to the structure in the way the other questions do. To stress cause and effect relationships notice how the first set of questions serves this purpose, while the second set, though it covers similar content, fails to do so.

Why do we suggest that you are what you eat? Why do nutritionists urge youth to "go easy" on candy, potato chips, and pop? or
What food elements do our bodies require?
Which type of foods should you avoid?

For each organizational pattern you can formulate questions that not only highlight information you believe students should master but also require them to think about the ideas not in isolation but in relationship to others. The immediate effect of this kind of reading guidance is improved comprehension. More important will be the development of skills and attitudes which facilitate comprehension of materials read independently.

Functional paragraphs can be treated similarly. For example, you can direct students attention to illustrative and summary types by raising questions about the content that require them to relate ideas and examples and find statements which convey the same or similar idea. Questions that focus attention on related but different ideas through recognition of signposts such as however, on the other hand, etc. reveal the transitional nature of the material.

A related problem are the confusing syntactical structures that some sentences contain. Although single sentences are less likely to be misunderstood, some students may require help in analyzing and comprehending them. They can be taught to identify the parts that contain the basic meanings: one which identifies the subject(s) and the other which provides information about the subject(s). All the other parts of the sentence contribute to the message it conveys, but they don't carry the basic information. Either by eliminating these or shifting them temporarily we can underscore the fundamental parts:

omit parts - The strands of the fungus that grow over the surface of the leaf then produce millions of spores which appear as a powdery substance on the leaves.

shift parts - At certain times of the year because of unsettled climatic conditions space explorations must be curtailed.
Once the basic information is recognized, the sentences may be reread in their original form for complete meaning.

Another way to attack a complex sentence is to analyze it for the different ideas it conveys. Several simple statements are contained in the following sentence:

A fragment of jawbone that appears to date early man back five and one-half million years had been discovered recently in the bush of Kenya by a group of Harvard scholars.

1. A fragment of jawbone had been discovered.
2. It had been discovered recently.
3. The fragment appears to date early man.
4. 
5. 
6. 
7. 
8. 

The sentence contains several but separate ideas that students might not recognize. This form of analysis requires the reader to pay careful attention to each group of words that carry meaning and to the relationships that exit among them. A rereading of the original sentence should now be more meaningful.

Still another source of confusion might be pronouns whose referents might be masked:

Trophy hunting by white men is no more popular with the Eskimos than the wasteful slaughter of the buffalo was with the American Indians. **It** seems to them a wasteful killing of an animal that they consider a resource.

Students can be taught to identify the word or words the pronoun represents by asking in this instance **what** seems to them a wasteful killing? and substitute it for the pronoun. This substitution will reveal whether the pronoun and referent are properly matched. If they aren't, the restructured sentence won't make much sense within the framework of other sentences. Pronouns that represent ideas may be treated similarly.
Recognizing Relationships (Inferential)

At the secondary level the ability to know what the writer means is no less important than to understand what he says. As with literal reading teachers should know in behavioristic terms what inferential reading encompasses so that they will be goal-oriented. To read inferentially is to draw conclusions, to make generalizations, to sense relationships, to predict outcomes, to realize author's purpose. These are related reading tasks, for each one requires students to use whatever ideas and information they know in order to sense what the author means. The real objective of teaching them to read for deeper meanings is to instill the attitude that reading requires more than receiving surface messages, that reading involves thinking about other ideas the messages might convey.

A way to teach students to make inferences is to require them to respond in specified ways. Teachers may do this through questions and discussions that focus the readers' attention upon the ways in which they must think in order to move beyond the surface messages. Suitable questions can stimulate thinking because they require us to use what we already know - the surface messages - to read between the lines. If responses were discussed, analysis could reveal weaknesses in them and suggest more appropriate ways to deal with subsequent reading tasks.

If we were teaching students to draw some conclusions from a given passage, we might offer several and then have the students seek from the information provided support for each. The ensuing discussion would reveal why some conclusions are more valid than others, that more than one might be drawn, that some should be rejected because they lack support. We could direct students' attention to a series of statements in a passage and from these consider whether or not they permit us to draw specified conclusions or make firm generalizations from them.
Similar treatments could be followed in assessing author's purpose and attitudes. Questions such as "What parts of the passage suggest that the author believes..." or "What might you infer from these statements about the author?" demonstrate to students the kinds of questions they must ask as they read on their own and how they must react to them.

Another aspect of drawing inferences is anticipating what kinds of information the author is likely to cover. Students may be taught to recognize signals that suggest what is ahead and to raise questions or make comments which can serve as additional purposes as they read. For example when students read that the present administration followed the basic foreign policy developed by previous administrations, they can ask themselves, "What policy?" This anticipation serves as a stimulus for reviewing in their own minds what they know about it and readying themselves for possible answers to the question they asked. Students who learn to read this way will not suffer from lack of direction; instead, they will be alert to nuances whose recognition can promote comprehension.

Evaluating Ideas

To read critically is to understand more. Although critical evaluation occurs after the reader has grasped the author's ideas or gained information, it is a natural extension of reading for meaning. Many students have the ability to evaluate what they read but fail to do so. Of course, some lack background against which to weigh ideas or do not learn as quickly as others. But each can be encouraged to react to the extent that he can. Stated as behavioral objectives, students will learn to judge accuracy, distinguish between fact and opinion, recognize qualification, perceive persuasion.

In order to reach these goals they will engage in reading which requires a wide sampling of materials so that they can compare coverage for similarities and differences. They will study information obtained from several sources such
as text and reference sources, newspapers and magazines with the intent of selecting relevant parts and rejecting others. They will analyze the content of editorials and relate it to the presentation of news that purports to be factual. As they read in literature they will compare fictional characters with people they know, observe how similar themes are treated by different writers, examine literary styles as means for achieving authors' purposes. In reading social studies they will weigh the actions of government and its citizens, make or withhold recommendations on the basis of known information, recognize that some evidence is difficult to verify or proofs hard to obtain. In studying science they will identify what is known and what is unknown about the universe, evaluate the validity of changing concepts, judge explanations and proposals on scientific and moral grounds. And in the other subject areas they will examine with an equally critical attitude the content they learn about.

Above all, we want to encourage a healthy skepticism and at the same time avoid intemperate behaviors. We can promote thoughtful evaluation by demonstrating the need for reading with an inquiring attitude and stressing the desirability of reaching judgments that are based upon valid information.