Subject-area teachers are not expected to be reading experts, but they can help students overcome reading difficulties. Students often fail to meet the subject-matter demands due to lack of purpose in reading content, unfamiliarity with technical vocabulary, and the heavy concept load and idea density in the material. Teachers can use reading techniques to guide the study of textbooks and other materials. A typical developmental reading lesson consists of five major stages: (1) readiness for reading, (2) silent reading, (3) discussion of the material, (4) rereading, and (5) application. Students should also learn how to establish reading objectives and efficient ways of pursuing them. Useful study skills include locating, selecting, organizing, and remembering information; use of graphic aids and directions; and developing reading flexibility. Strategies the teacher can use to help students improve reading in content fields are (1) to teach students to recognize the organization of the book and the pattern of writing, (2) to provide reading-study guides, (3) to use questions and surveys to direct student attention, (4) to teach students how to establish purposes for reading, and (5) to enrich their vocabulary.
Developing Reading Ability in The Content Fields

Is it realistic to expect subject-matter teachers (and I include English teachers in this group) to help their students overcome some of the difficulties they meet in their daily reading? I believe that any help a teacher can give students to master the content of a course is a reasonable expectation. Guidance in reading textbooks and other materials may be just the help students need. It is not difficult to justify any assistance that allows students to help themselves.

Subject-matter teachers are not expected to be reading experts although some are highly qualified to supervise reading programs. It is understandable that teachers who have not had much training in reading are reluctant to assume responsibility for teaching it. But a teacher does not have to be an expert to help students read assignments. If he understands some of the factors that affect a reader's efficiency, he can learn techniques to deal with them. Teachers who somewhat reluctantly "wet their feet" have been surprised and gratified by the results they achieved. I have met many of them whose enthusiasm for
teaching reading was aroused by their first efforts and who sought systematic help to improve their teaching techniques.

**Basic Assumptions**

The ideas expressed in this paper are conditioned upon three assumptions:

1. General reading ability is a necessary foundation for reading all kinds of materials.

2. The possession of general reading ability does not assure ability to read all kinds of materials.

3. Some special reading abilities are associated with materials in subject areas.

These assumptions are outgrowths of data obtained over the years from investigations and experiences. To deny that the skills of reading are related cannot be supported by present knowledge; to deny that some possess sufficient individuality to warrant special treatment is equally tenuous.

**Reading Skills**

The reading process has been described as a series of steps through which the reader moves. He recognizes what the words say and the meanings that are attached to them. He then synthesizes these individual meanings into units of thought in order to discover what ideas are being offered. This second step, called literal comprehension, leads to the
third which involves the reader with deeper meanings. These deeper meanings are inferred from the information that is obtained through literal reading. Critical reaction and evaluation follows interpretative reading. Finally, the impact of these previous steps is felt through the influences which the ideas gained through reading have upon the reader's thoughts and acts.

Every reader, we know, does not pass through each phase of this reading process. In fact, a considerable number does not move beyond literal comprehension. The expectation that interpretation and reaction will occur is increased by direct teaching of them. Without either, the results of reading are not likely to be felt.

The teacher of reading is familiar with this sequence of development. He regards interpretative and evaluative reading to be major goals of instruction. He sees through them the possibility that students will share what others know, see, and feel, and derive benefits from this communion.

Subject area teachers are teachers of basic reading in that the impact which the skills of reading have upon understanding content is not inconsiderable. There is no need to point out to them that the skills of word identification—sight, vocabulary, context clues, phonics, word structure and dictionary—facilitate fluency in reading. Nor do they fail to grasp the importance of the skills that contribute to
understanding--individual word meanings as determined by context, literal reading, interpretive reading that includes cause-and-effect, generalizations, conclusions and author's purpose, and critical reaction involving accuracy, truthfulness, authority, and sincerity among other things. We may add to these abilities flexibility in reading that encompasses varied rates of reading for different purposes and for different materials and recognition of authors' patterns of writing that are reflected in the use of word signals, paragraph structure and idea design. Moreover, the study skills, which will be described later, have special relevance when students read in science, social studies, mathematics and other subject areas.

Why are we so concerned about providing reading instruction in the content fields? I suspect the most direct answer to this question is found in our students' inability to meet the subject-matter demands we place upon them. This inability has been associated with a number of problems. Many students find that subject-matter books are more difficult to read than books that tell a story because they are passive readers; they are unfamiliar with the language; and their reading is complicated by the author's style of expression. Put another way, students lack purpose in reading content, and their reading of science, mathematics, history
and other subjects is interfered with by technical vocabulary and concept load. In addition, readers often find the idea density much greater in these materials. Frequently these ideas may be only partially understood. They come so rapidly that many readers feel overwhelmed.

Permit me to give you merely one example of what I mean. It points up some of the reading problems our young people face since it is not atypical:

"The intensity of light falling on a body is inversely proportional to the square of the distance from the light source."

As in all reading in subject-matter areas, it is not enough for the reader to know the vocabulary in this statement; he must understand the concepts, and the relationship of the various words must be clear. Add to these difficulties no real commitment by the student to solve them. The sum, put in the vernacular, is "I read it but I don't get it."

HELPING STUDENTS READ CONTENT

The teachers of content subjects strive to help their students acquire information about and basic understanding of the physical and social environment in which they live. Although there are different ways of obtaining basic knowledge, textbooks continue to be an important source of information. The use of reading techniques to guide the study of textbooks
and supplementary materials is one means of insuring adequate and meaningful learning of their content.

**Directed Lessons**

Some selections are more difficult than others, and the guidance of their reading by teachers can affect outcomes that might not otherwise be obtained. This guidance may take the form of a directed reading lesson whose aspects are less-known to secondary-school teachers than they are to elementary-school teachers.

A typical developmental reading lesson consists of five major stages:

1. readiness for reading
2. first reading (silent)
3. discussion of the material
4. rereading (silent and/or oral)
5. application

The readiness concept has been applied to beginning or primary reading but its influences may be felt at each instructional level. No student can profit fully from any instruction if he is not ready to participate in it. Just as he would not be able to master principles of algebra without a knowledge of the fundamentals of arithmetic, so would he not be ready to respond satisfactorily to concepts if he lacked prior experiences with them.
The first stage is readiness. The experiences of the reader are related to the content that is to be covered and the purposes for which he is to read the content. Students are encouraged to discuss and share what they know about the topic. The teacher may give students the benefit of his experiences. This background information serves the purpose of intimately involving the reader with the content and preparing him for what is to follow. The presentation of unfamiliar vocabulary and the clarification of difficult concepts make the reading less-burdensome and more meaningful than it would be without any advance treatment. The readiness stage is completed with the setting of a major purpose for reading with smaller guiding questions. If the lesson were forty-five minutes long, approximately from five to ten minutes might be devoted to readiness. Some specialists suggest that longer periods of time should be spent in preparing pupils for reading and, if necessary, that the actual reading be completed outside of class.

The second stage of the lesson is the reading of the content. This first reading is conducted silently on the grounds that oral reading is reserved for audience situations and should be preceded by preparation. During this reading the teacher is able to confer briefly with students who need additional help with vocabulary or concepts. The actual time spent in reading is not very great since length assignments are reserved for out-of-class reading.
The third stage is one in which students have the opportunity of discussing the material in terms of the larger and smaller purposes. This is the time during which the teacher discovers to what extent the principles underlying the factual details are grasped and what he must do in order to help the students master them. If the discussion reveals that some section of the text have been misunderstood or that information has been misinterpreted, then these sections may be reread. The clarification of issues or the confirmation of judgments may be reasons for reading portions of the text again. A point may be proved by the reading of a few sentences. In this latter instance, one student might read them orally while the others listened.

The final stage consists of using the information that has been gained from the reading. The form which application takes depends upon the nature of the content and the aim of the lesson. A chart may be drawn, comparisons made, models constructed, scripts written or plays acted. The realization that integration of knowledge is the ultimate goal of the reading process confirms the need for training students to use what they have learned. Another justification is the recognition that transfer of learning is facilitated by teaching for transfer and noting elements that are common to different settings.
Study Skills

The specialized skills in reading one kind of content are really not very different—except perhaps for material containing mathematical symbols—from those required to read other kinds of content. In order for students to acquire knowledge through their own efforts they must learn to provide the self-direction that is so necessary to the successful completion of independent activities. They must learn efficient ways of pursuing their objectives once they have established them. They must learn to be selective as they receive quantities of information, separating ideas from each other and retaining those which are needed to complete their task. They must learn to make decisions, to test alternatives, to reconstruct ideas. Skills which students use in such independent reading activities are known as the study skills. Word-identification and the usual meaning skills are not ordinarily included among the study skills.

The study skills consist of several different skills, some of which are related and dependent upon each other. For example, one's ability to summarize the views expressed by an editorial writer (organization) depends upon the former's ability to recognize important ideas and details (selection and evaluation). The categorization of these skills provides a helpful framework from which instruction may originate. Reading specialists have described study skills in various ways; however, their nomenclature is less important than their recognition.
Stated in behavioral terms the study skills include the following: to establish purposes for reading through surveys; to locate information and its sources through the use of tables of contents, appendixes, indexes, library-card catalogues, encyclopedias, almanacs, reader's guides; to select information by recognizing its significance, important ideas and details; to organize and remember information through note taking, summarizing, outlining and following organizational patterns; to understand the significance of graphic aids by reading and interpreting diagrams, charts, tables, maps, graphs, cartoons and pictures; to follow directions, both simple and complex, and to see relationships between them and the learners purposes; and to develop reading flexibility that is characterized by slow careful reading and rereading, rapid reading, scanning and skimming.

Teachers might use the following guidelines from which they could draw strategies for teaching study skills:

1. Use the textbooks and other materials students are required to read.

2. Concentrate upon those skills which help students solve current problems.

3. Determine before instruction in which skills areas and their components students require help.

4. Select materials whose content students don't find too difficult to understand.

5. Develop a hierarchy of skills and teach them in sequence.
Other Strategies

What else can teachers do to help students improve their reading in the content fields?

We can teach students to recognize how the books they read are organized. It is amazing how many students fail to recognize that most authors follow a plan and that an analysis of chapter titles, headings and sub-headings give clues to that plan. Many also fail to realize that these organizational aids provide an outline of the content as well as highlight important areas for study and concentration.

We can provide reading-study guides to accompany their reading. These reading-study guides clue in the reader to look for elements that are aids to developing specific abilities. For example, if we wish to develop competence in recognizing context clues as aids to word meaning, we can provide questions which direct the reader's attention to them. Or we might ask whether such and such clues lead us to one meaning or another.

We can teach students to recognize patterns of writing, the recognition of which contribute to increased understanding. There are a number of patterns that are common to different types of content. Among these are time order, enumeration, comparison-contrast, cause-effect, question-answer, generalization - explanation and so on. As Niles points out so well, you can use questions to direct a student's attention to the
structure, you can survey the material with the class for the purpose of anticipating the nature of the content and the way in which it will be presented. You can read to students and by emphasis, pauses, inflections direct their attention to the structure.

We can help students to become independent readers by teaching them how to establish purposes for reading when none is given. One reason why students fail to remember much of what they read is that they do not establish any specific purposes other than "cover" a given amount of material. Purposeful reading is a key to meaningful learning.

We can enrich their vocabularies by providing many exposures to words. Categorizing them, studying their origins and deriving new words from familiar ones, using them in different contexts, devising word puzzles, using analogies, concentrating upon semantic influences - all these and more will aid your students to read with greater competence.

It is very difficult if not impossible to cover comprehensively in the time allotted this matter of developing skills in content reading. I hope that I have supplied some directions and possibly some challenges.