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Instruction of reading study skills in four academic content areas of California secondary schools

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INSTRUCTION OF READING STUDY SKILLS IN FOUR ACADEMIC

CONTENT AREAS OF CALIFORNIA SECONDARY SCHOOLS

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Doctor of Education

by

Judith Chibante Neal

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This dissertation, written and submitted by

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Dissertation Committee:

_Chairman

Dated   March 22, 1988

Abstract

INSTRUCTION OF READING STUDY SKILLS IN FOUR ACADAMIC CONTENT AREAS OF CALIFORNIA SECONDARY SCHOOLS

Judith Chibante Neal

The purpose of this study was to determine the status of instruction of reading study skills as revealed by a state-wide survey of teachers. The problem was: To what extent are academic content area teachers in California secondary schools providing instruction in reading study skills as part of their instruction program? An analysis of the problem yielded eight questions related to the perceptions and practices of teachers in the four content areas of English, mathematics, science, and social science. Eleven hypotheses were proposed related to possible differences among sub-groups of teachers.

The research was descriptive in nature and employed a survey design in which a questionnaire was the survey instrument. Questionnaires were distributed to 688 teachers in a randomly selected sample of 172 schools. The total number of respondents was 374 (54.5 percent). Follow-up telephone interviews were conducted with twenty respondents.

Teachers perceive reading study skills to be important to student success in their respective content areas. Teachers consider "Identifying main ideas" as the single most important

reading study skill. They rate the ability level of students to perform reading study skills as neither high nor low. They report that they allocate time for reading study skills instruction. Respondents report that they use all of the recommended instructional procedures listed on the questionnnaire. The findings with respect to the perceived ability level of students and allocation of instructional time are in distinct contrast to the literature.

Three recommendations were proposed: 1) That further research involving direct classroom observation be designed and conducted to investigate the allocation of time for teaching reading study skills in order to determine the ratio of process versus content instruction that is being provided for secondary students; 2) That at all educational levels, the issue of coverage of content versus the quality of teaching and learning be examined as a critical issue related to teacher effectiveness; 3) That school districts and other educational agencies provide in-service opportunities in order to promote a greater understanding of the importance of reading study skills for independent learning and to develop teacher expertise in the instruction of these skills.

TABLE OF CONTENTS

Page

APPENDICES   Page

LIST OF TABLES

LIST OF ILLUSTRATIONS

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Chapter 1

INTRODUCTION

Teaching the skills of learning how to learn is emerging as a major focus of recent efforts to restructure American secondary education. National reports and research studies have documented the passive role of secondary students, which is characterized by a concomitant sense of powerlessness (Sizer, 1984) and a general lack of ability among students to think critically (Goodlad, 1984; Boyer, 1983) and learn independently (Bean, Singer, Sorter, and Frazee, 1983b; Cottier and Koehler, 1978; Hawthorne, 1963; Sargent, 1979). Perhaps not surprisingly, at the same time, we are witnessing an alarming increase in the number of students who leave school before high school graduation (Boyer, 1983; Assembly Office of Research, 1985). An instructional change-of-direction, intended to empower students as learners, may be required to revitalize secondary classrooms.

Teaching how-to-learn skills, or study skills,[1] as a primary aim of instruction is a reaffirmation that the ability to learn independently is a fundamental goal of schooling. In his *Freedom to Learn for the 80's*, Carl Rogers (1983) reflects:

> We are, in my view, faced with an entirely new situation in education where the goal of education, if we are to survive, is the *facilitation of change and learning.* The only man who is educated is the man who has learned how to learn; the man who has learned how to adapt and change; the man who has realized that no knowledge is secure, that only the process of *seeking* knowledge gives a basis for security. Changingness, a reliance on *process* rather than upon static knowledge, is the only thing that makes any sense as a goal for education in the modern world (p. 120).

Reflecting the same instructional emphasis on teaching process skills, Graham and Robinson (1984) state:

> Learning how to learn on their own is more important to students than anything else we can teach them. Teaching study skills means showing students how to solve their problems--which has more to do with how they are taught than what they are taught (p. 3).

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[1] In the literature, *how to learn skills*, *learning-to-learn skills*, and the more traditional *study skills* are synonymous terms.

Additionally, in a paper based upon an important address to the educational research community, Brown, Campione, and Day (1981) assert:

> . . . Training studies aimed at improving students' academic performance can succeed by adding substantially to the students' knowledge; or they can succeed by instructing students in ways to enhance their own knowledge (i.e., in promoting learning to learn activities). It is this latter outcome that we now think is most desirable . . . (p. 14).

The emphasis on student independence as a goal of education accompanies the well-established view of education as a life-long process (Frederick, Ragsdale, and Salisbury, 1938; Armstrong, 1956; Shane, 1977; Brown, 1982; Rogers, 1983; Roberts and Cawelti, 1984), not a set amount of content knowledge that is acquired in twelve, or even sixteen years, of formal schooling. As technical, specific knowledge rapidly becomes obsolete, it is indeed the ability to continue one's education that is the hallmark of an educated person.

> . . .The importance of learning how to study is not a seasonal topic which can be forgotten when you have finished school or college . . . What you will have left of your education will be the ability to analyze and solve problems, whether these problems be on a draftsman's board or within the recesses of your own soul. If you have learned how to study, you stand a fair chance of

escaping the world of half-truths and misapplication,
and enjoying to a degree the fulfillment of your talents
(Armstrong, 1956, pp. 1-2).

Although student independence as a goal of education and the view of individuals as life-long learners are not new themes in education, teaching how-to-learn skills may have special relevance now that those ideas have been reaffirmed. Viewed as the highest form of literacy (Bormuth, 1975), and as a basic academic competency (Marshak and Burkle, 1981; *Academic Preparation for College*, 1983), the ability to study independently is a highly regarded means of empowering students as active, successful learners.

Purpose of the Study

Many, varied skills comprise the ability to study independently. Because the curriculum of secondary schools consists of learning from printed materials, among the most important study skills for secondary students are *reading study skills*. The emphasis on the use of textbooks in the secondary grades to convey content concepts requires that learners be trained in the specific skills that enable them to read and study expository text.

Moreover, scholarly opinion agrees that instruction in reading study skills is best accomplished throughout the curriculum as an

integral part of instruction in all academic classrooms (Early, 1964; Lurie, 1972; Hoffman and Condon, 1979; Singer and Donlan, 1980; Harker, 1981; Marshak and Burkle, 1981; Karlin, 1984; Singer and Bean, 1984; Robinson and Jennings, 1985; Marzano and Arredondo, 1986). Teachers in the academic subject areas are in the best position to teach process skills in the context of specific content, thereby enabling direct application of those skills.

Accordingly, the purpose of this study was to determine the status of instruction of reading study skills within the academic content areas of California secondary schools as revealed by a state-wide survey of teachers. Such information is valuable for three distinct groups: professors of reading methodology at the college and university levels; school personnel responsible for staff development; and, teachers in the four academic subject matter fields of English, mathematics, science, and social science.

Professors of reading methodology in teacher preparation programs may desire to evaluate the extent to which aspects of the reading course requirement for secondary teacher candidates are reflected in teaching practice. Currently, secondary credential candidates in a majority of states are required to complete a reading methods course as one aspect of their preparation to be an academic content area teacher. Now a common feature of teacher preparation in California, this course is designed to acquaint teachers with aspects of reading relevant to teaching students in a print-dominant curriculum. Among the most common topics of the

reading methods course is the topic of study skills (Farrell and Cirrincione, 1986). This study contributes information toward how successfully the reading course requirement is influencing the instructional practices of teachers.

Another group for whom the study is relevant is school personnel who are responsible for staff development. These educators seek insight and direction for providing in-service training to teachers on the basis of a perceived need for changes in instructional practice. This study provides a source of information for determining whether secondary academic content teachers require additional training in teaching reading study skills.

Results of this study also have relevance for practitioners in the four content areas which the study addresses. Professional educators in English, mathematics, science, and social science remain current in their respective fields by maintaining an awareness of curricular practices and problems. This study represents a survey of teachers in each of the core academic subjects with regard to their instructional practices and the problems which they perceive in providing for the learning needs of their students. It contributes, therefore, to communication and greater understanding among subject-matter practitioners.

The Problem

The ability to perform reading study skills enables learners to study and retain expository text, a common requirement in the secondary grades. Teachers of academic subjects need to be aware of the importance of teaching reading study skills as a means of promoting student independence of learning. By ascertaining their current perceptions and practices related to reading study skills, greater insight may be gained into the current instructional orientation of academic content area teachers.

Statement of the Problem

The problem of this study was: To what extent are academic content area teachers in California secondary schools providing instruction in reading study skills as part of their instructional program? An analysis of the problem yielded the following questions:

1. Which specific reading study skills do content area teachers perceive to be important to student success in the subject area in which they teach?

2. What are the perceptions of content area teachers regarding the current level of abilities of students to perform reading study skills?

3. To what extent do content area teachers allocate time to the instruction of reading study skills?

4. What instructional procedures do teachers utilize in study skills instruction?

5. To what extent are teachers confident of their ability to teach the reading study skills that students need?

6. To what extent is course content conveyed by means of: textbook, supplementary written materials, and discussion/lecture/oral explanation?

7. What practical factors encourage and/or inhibit the efforts of teachers to teach reading study skills?

8. What assistance or instructional provisions would enhance the efforts of teachers to teach reading study skills?

In addition, certain hypotheses were deemed relevant to a thorough investigation of the problem. Data was collected relative to seven teacher variables: subject area taught, ability level taught, grade level taught, gender, years of teaching experience, number of college/university courses in Reading, and level of educational preparation. The null hypotheses that were examined with reference to each teacher variable are:[2]

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[2] In order to facilitate discussion of dependent variables under consideration, abbreviated forms in bold-face type are introduced here and will be used in subsequent chapters.

1. The perceived importance of reading study skills for student success (**Importance**) does not differ by teacher variable.

2. The perceived current level of abilities of students to perform reading study skills (**Ability**) does not differ by teacher variable.

3. The extent to which content area teachers allocate time to the instruction of reading study skills (**Instructional Time**) does not differ by teacher variable.

4. The extent to which course content is conveyed by the instructional mediums of textbook, supplementary written materials, and discussion/lecture/oral explanation (**Mediums of Instruction**) does not differ by teacher variable.

5. The extent to which teachers are confident of their ability to teach reading study skills (**Confidence**) does not differ by teacher variable.

6. The instructional procedures utilized in reading study skills instruction are not related by teacher variable.

To investigate the possibility of other relationships among the data, the following null hypotheses also were examined :

7. The perceived importance of reading study skills to student success (**Importance**) is not correlated with the perceived abilities of students to perform study skills (**Ability**).

8. The perceived importance of reading study skills to student success (**Importance**) is not correlated with the extent of

instructional time allocated to teaching study skills
(**Instructional Time**).

9. The perceived abilities of students to perform reading study skills (**Ability**) is not correlated with the extent of instructional time allocated to teaching study skills (**Instructional Time**).

10. The medium of instruction of course content (**Mediums of Instruction**) is not related to perceived importance of reading study skills (**Importance**), to perceived ability of students to perform reading study skills (**Ability**), or to allocation of instructional time for teaching reading study skills (**Instructional Time**).

11. The extent to which teachers are confident of their ability to teach reading study skills (**Confidence**) is not correlated with the extent of instructional time allocated to teaching reading study skills (**Instructional Time**).

The eight analysis questions and eleven hypotheses provided a focus for analyzing and reporting the data obtained. Descriptive statistical data were derived for all variables in the study and served to address the analysis questions. On the basis of the descriptive data obtained, the null hypotheses were tested for statistical significance using inferential procedures.

Assumptions of the Study

Of several assumptions which underlie this investigation, two relate to its processes. A fundamental premise is that descriptive research represents a unique and valuable form of knowledge. Descriptive studies frequently provide the impetus for initiating change (Pearson and Gallagher, 1983). Examples of such studies are the major descriptive studies of the 1980's (Boyer, 1983; Sizer, 1984; Goodlad, 1984; National Commission on Excellence in Education, 1983) which have helped accelerate the most recent education reform movement.

The second assumption related to the process of research is that a selected sample of respondents yields data representative of the larger population. For this study, therefore, an assumption is made that the instructional perceptions and practices as reported by teachers within the sample are representative of teachers who teach in the four academic subject areas that were surveyed.

Two further assumptions relate to instructional practice. One emerges from the mandatory attendance statute in California that requires all youth to attend school until the age of eighteen. This assumption is that a basic instructional responsibility of the schools is to provide the necessary support skills which enable students to experience success in learning (Shuman, 1978). To demand attendance without providing the means for achieving success is, at the least, unjust to an ideal of education in which a desire for learning is to be nurtured.

Finally, teacher preparation, courses of study, and central office policy aside, an assumption of this study is that it is teachers who ultimately determine the curriculum. Teachers make instructional choices based on their perceptions of what is important for students to do and know for success in learning. Teaching the skills necessary for processing and retaining textbook information reflects an overt decision to provide students with how-to-learn capabilities in conjunction with presenting concepts of subject matter. In daily practice, therefore, through decisions regarding emphasis of subject matter and manner of presentation of materials, teachers make the curricular choices that shape the curriculum which students experience. What teachers actually implement in terms of practice, therefore, is important and significant.

Definitions

Precise definitions serve to clarify the meaning of principal terms used in a study. A pivotal term for this investigation is *reading study skills.* Although it is not defined as a discrete term in the literature, its definition may be adduced by an examination of how reading professionals define *studying, study* , and *study skills:*

> Studying is a form of reading. The way that studying differs from "ordinary reading" is that studying is associated with the requirement to perform

identifiable cognitive or procedural tasks. . . (Anderson and Armbruster, 1984b, p. 657).

A Dictionary of Reading and Related Terms (Harris and Hodges, 1981) offers this definition of *study* : " . . . attentive, thoughtful examination of a subject, activity, problem, etc., with a view of gaining knowledge. . . ."; and this definition of *study skills* : " . . . a general term for those techniques and strategies which help a person read or listen for specific purposes with the intent to remember . . . ." Graham and Robinson (1984) provide additional depth to the term *study skills* :

> Study skills are specific abilities which students may use alone or in combination to learn the content of the curriculum on their own. These abilities are rooted in the reading process. A set of study skills used to solve a problem . . . is a *strategy* . . . (p. 3).

On the basis of these definitions, *reading study skills* is operationally defined as: *specific skills that students utilize when reading textbook information which enable them to retain information for future retrieval in order to perform criterial tasks. These skills permit students to learn on an independent basis.*

The term *content area* is defined by Harris and Hodges (1981) as:

> an organized body of knowledge, or discipline, that is reflected in its technical vocabulary, as mathematics, social studies, literature, science. *Note* : Reading, an instrumental or tool subject which cuts

across all content fields, is ordinarily not considered a content field.

Of the many subject matter fields represented in secondary schools, the four most commonly-recognized academic content areas are English (language arts), mathematics, science, and social science. These four subject fields constitute the operational definition of *four academic content areas.*

The remainder of important terms refer to the specific skills identified from the literature which are most commonly recommended for direct instruction. These terms comprise the study skills listed on the survey instrument and to which content area teachers responded. (Except where noted, definitions used in the following descriptions of each skill are those given by Harris and Hodges, 1981.)

Surveying is the skill which illustrates the ability of students to *survey* : ". . . to make a comprehensive overview . . . " Specifically, this term refers to the practice of surveying a chapter prior to reading in order to discern its major ideas and organization, a primary requisite for retaining information.

Predicting content is the skill which illustrates the ability of students to use *prediction strategy* : ". . . a person's use of knowledge about language and the context in which it occurs to anticipate what is coming in writing or speech. . . ." When performing this skill, students utilize information gained from surveying to make predictions about the ideas to be presented.

Identifying main ideas is the skill which illustrates the ability of students to locate ". . .the central thought, meaning, or gist of a passage. . . ."

Using texbook organizational devices is the skill which illustrates the ability of students to identify major ideas in textual material by utilizing information from chapter headings, chapter subheadings, different-face type, and chapter introductions and summaries.

Posing questions from text is the skill which illustrates the ability of students to formulate questions from text. Students may engage in posing questions from text based on a survey of the material before reading. The questions then serve as purposes for reading. They may also generate questions during their reading and after reading.

Notetaking is ". . . the study skill of outlining and/or summarizing the important ideas of a . . . book . . . to aid in the organization and retention of ideas. . . ."

Paraphrasing is the skill which illustrates the ability of students to *paraphrase* : ". . . the act . . . of stating something in a different linguistic form in a language without altering its meaning. . . ."

Summarizing is the skill which illustrates the ability of students to produce a *summary* : ". . . a brief statement which contains the essential ideas of a longer passage or selection."

Outlining is the skill which illustrates the ability of students to construct an *outline* : ". . . a short verbal sketch which reveals through its organization the pattern of ideas of something read. . . ."

Diagrammatic representations are techniques which translate textbook ideas into diagram form. Because these techniques are recent developments in study skills instruction, definitions do not appear in either *Dictionary of Education* or *Dictionary of Reading and Related Terms.* The term *diagrammatic representations* as used by Anderson and Armbruster (1984b) is selected for its generality in denoting any of several specific techniques that require students to engage in the ". . . transformation of linear prose into nonlinear symbolic representations . . . (p. 673)." This description serves as the operational definition for the skill *Constructing diagrammatic representations.*

Reciting material is the skill which illustrates the ability of students to engage in *recitation* : ". . . the act of repeating something . . . an oral presentation of something from memory . . ."

Using a textbook reading/study strategy is the skill which illustrates the ability of students to utilize a set of study skills for a *study strategy* : ". . . a systematic process for the intensive study of a selection for retention and recall. *SQ3R is a study strategy.*"

Two important terms were used in the foregoing descriptions of skills. *Text* is ". . . that part of a page or book which is the written or printed matter, in contrast to illustrations; words. . . ."

Textbook is ". . . a book on a specific subject matter used as a teaching-learning guide, especially in schools and colleges. . . ."

Limitations of the Study

This study was limited in focus to English, mathematics, science, and social science teachers of students in grades seven through twelve who teach their subjects in regular classroom settings in the state of California. It was also limited with respect to the validity of teacher report. Teachers were asked to give their perceptions and to indicate their instructional practices related to reading study skills within their classrooms. Because the data consist of teacher report, the findings may not reflect actual practice.

Other limitations relate to the review of literature. *Reading study skills* is a shared concept in two major bodies of educational literature. In *study skills* literature, *reading study skills* appears as a parallel concept to other types of self-directed learning behaviors: time management techniques; test-taking strategies; listening and note-taking procedures; and, ways to increase motivation, interest, and concentration. In the field of *Reading*, the other body of literature, *reading study skills* appears as a parallel concept to other topics related to general reading ability: readiness for reading; assessment of student achievement levels; word recognition; vocabulary/concept development; and,

word recognition; vocabulary/concept development; and, comprehension. Figure 1 serves to illustrate that *reading study skills* exists as a common area of independent learning skills in both sets of literature.

Figure 1

Reading Study Skills in Two Bodies of Literature

Study Skills Literature Topics	Reading Literature Topics
Time Management	Readiness
Test-taking	Assessment
Listening	Word Recognition
Note-taking	Vocabulary Development
Motivation/Interest	Comprehension
Reading [Study] Skills	**[Reading] Study Skills**

Because of the more specialized, theoretical nature of the literature of reading, this study adopts the orientation to the concept of reading study skills as represented in the reading literature. Literature reviewed, therefore, was limited to studies and sources of expert opinion that express the view of reading study skills as process skills that enable students to read independently from, and to retain the ideas of, textbook materials.

Furthermore, within the literature of reading, only those reading study skills that are associated with the demands of retaining information learned from text on an independent basis were reviewed. Therefore, other reading study skills commonly-identified in the literature, i.e., reference/library skills, locational skills, graph- and map-reading skills, or skimming/scanning skills were deemed irrelevant to this investigation.

To ascertain specific skills and procedures appropriate for instruction of adolescents for inclusion in the questionnaire, the literature reviewed also was limited to studies and articles of scholarly opinion that specifically address instruction of secondary school students. Therefore, although a wealth of literature addresses college-level reading study skills, no literature related to study skills on the college level was reviewed. Important differences in developmental levels and motivational levels exist between secondary students and college learners. Because of these important differences, research studies

and scholarly opinion relevant to the college level are not necessarily generalizable to developmentally less mature students who fall under the provisions of the state mandatory attendance law.

Summary

This chapter provided a conceptual framework for the study founded upon the view of education as a life-long process. Such a concept of education necessarily embraces the idea that developing independence in learning is a fundamental goal of education. Teaching the skills associated with learning how to learn is critical for independent learning.

Among the most important how-to-learn skills for pupils as they move from the elementary grades to the secondary grades, are study skills related to reading. Because teachers in the academic subject areas are in the best position to teach process skills in the context requiring their use, instruction in reading study skills is best accomplished throughout the curriculum in all academic classrooms.

The problem investigated was: To what extent are academic content area teachers in California secondary schools providing instruction in reading study skills as part of their instructional program? An analysis of the problem yielded eight questions for primary analysis of the data. In addition, eleven hypotheses

related to the problem were identified and served as a basis for further analysis of the data.

Reading study skills was operationnaly defined as *specific skills that students utilize when reading textbook information which enable them to retain information for future retrieval in order to perform criterial tasks. These skills permit students to learn on an independent basis.* The subject matter fields of English, mathematics, science, and social science constituted the four academic content areas from which data describing instructional practice were obtained. Twelve discrete skills comprised the specific study abilities which were a primary focus of the survey instrument.

The next chapter presents a review of related literature from the field of reading. It supports and provides a rationale for the focus of the study as outlined in this chapter.

Chapter 2
REVIEW OF RELATED LITERATURE

The purpose of this chapter is threefold. The first purpose is to develop a theoretical framework within which to view study behavior and define the role of the teacher in fostering the development of study skills. The role of the teacher in promoting the independent learning behavior of pupils is an important concept and underlies the focus of this investigation, i. e., the perceptions and practices of teachers with respect to providing instruction in reading study skills. The major section entitled, "A Theoretical Framework for Teaching Reading Study Skills" develops these ideas.

The second purpose of the chapter is to provide a rationale for the content of the survey questionnaire itself. The rationale is developed in three major sections. The most commonly-cited reading study skills recommended for direct instruction to students in the literature of reading are discussed and reviewed in the section entitled, "The Questionnaire: Specific Reading Study Skills for Instruction." These are the specific study skills which were listed on the questionnaire. For each reading study skill, teachers were asked to respond along three dimensions; therefore,

in the next portion of the chapter, "The Questionnaire: Dimensions of Importance, Instructional Time, and Ability," research and scholarly opinion is reviewed relative to each dimension. Teachers also were asked to indicate which instructional practices they utilize in providing instruction in reading study skills. The procedure by which those specific practices were identified from the literature is presented in the section, "The Questionnaire: Methods for Teaching Reading Study Skills."

In the final major section of this chapter entitled, "Anticipated Findings Based upon the Review of Literature," the central problem of the investigation, the eight analysis questions of the problem, and the eleven proposed hypotheses are restated. For each question and each hypothesis, anticipated findings of the data are projected on the basis of the review of literature.

A Theoretical Framework for Teaching Reading Study Skills

Theory enables conceptualization of a process or phenomenological state, thereby defining it so as to permit discussion and communication among interested parties. In this section, the intent of the investigator is to present selected ideas, drawn from the literature of reading and developmental theory, as a common reference point from which to view reading study skills instruction in secondary schools. This framework serves to define

and explore the concept of study and the role of content area teachers in fostering study behavior in their pupils. These ideas are developed in the following sub-sections: "The Nature of Study;" "The Teacher as Mediator;" "An Integrated Approach: Instruction in Content Areas;" and, "The Reading Course Requirement for Secondary Teacher Candidates."

The Nature of Study

Study is a unique form of learning behavior. It is ". . . intentional learning. . . . (Frederick, Ragsdale, and Salisbury, 1938, p. 23)" and ". . . requires a better grasp of the information than recalling and dealing with literal comprehension . . . (Stauffer, 1969, p. 441)." At least three distinct characteristics set it apart from simple reading for understanding.

First, study is performed in reference to a specific, criterion task (Anderson and Armbruster, 1984b), such as taking a test or writing a report. The teacher sets the criterion task, and frequently the task is a reflection of the personal philosophy of education held by the teacher (Butterweck, 1926). The quality of performance by students on a given criterion task is associated with the amount of specific knowledge that the teacher provides about the requirements of the task; thus, the more specific knowledge students have about the "criterion event," the more effective their studying will be in terms of performing it. Study, therefore, will be effective if students process the right

information in the right way, where 'rightness' is defined in relationship to the criterion task (Anderson and Armbruster, 1984b). The teacher, in determining and communicating the requirements of the criterion task, is literally in control of the information that will define whether studying is effective or ineffective.

Second, several other variables exist within the study process itself. Two major sets of variables are state variables and process variables (Anderson and Armbruster, 1984b). *State variables* are those conditions that relate to the status of the student and the material to be studied. In addition to knowledge of the criterion task, other state variables include knowledge of the content material and motivation to learn. *Process variables* are those activities that are related to getting information from the printed page into the mind of the learner; among the most important of these activities are study techniques, commonly known as study skills. State variables--knowledge of the criterion task, knowledge of the content to be learned, and motivation to learn-- are accompanied by processing the information in some way, via study skills, in order to retain it for performance on the criterion task. Outcomes of study, then, are a result of this interaction between state variables and process variables (Anderson and Armbruster, 1984b).

Third, study requires learners to monitor their own understanding of the material and to change study activities in

view of any difficulty that is incurred. Good students are aware of their own cognitive operations; they know whether they understand an idea or not and what to do if comprehension has failed (Brown and Palinscar, 1982; Baker and Brown, 1984; Anderson and Armbruster, 1984b). Locke (1975) observes:

> Studying actually requires a double or *split mental focus*. On the one hand, you need to be focused on the material itself . . . at the same time, however, you need to be constantly checking to see that you are actually performing those mental operations that produce learning. In short, you need to monitor your mental processes while studying (p. 126).

The ability of learners to monitor their mental processes, to think and reflect upon their thinking and understanding, is known as *metacognition* (Flavell, 1976; McCombs, 1984; Brown, 1980; Brown, 1981; Baker and Brown, 1984) and is also represented in the literature by the terms *study monitoring* (Locke, 1975) and *comprehension monitoring* (Harris and Sipay, 1985; Markman, 1985). During study, metacognition serves as a "higher-order processor" (Anderson and Armbruster, 1984b) that orchestrates the interaction between state and process variables in order to meet the requirements of a criterion task. As such, it performs a critical coordinating and monitoring function during study. "There seems to be little disagreement that at the heart of the enterprise [helping students learn from text for themselves] is the development of self-monitoring activities. . . (Tierney, 1982, p.

299)." This model of study in which state and process variables are regulated by the thinking process of metacognition to fulfill the demands of a specific criterion task is illustrated in Figure 2.

Figure 2

A Model of Study

STATE VARIABLES ⟷ **METACOGNITION** ⟷ PROCESS VARIABLES

Knowledge of Content   Focusing Attention
Knowledge of Criterion Task   Encoding Activities (Study Skills)
Motivation   Retrieval
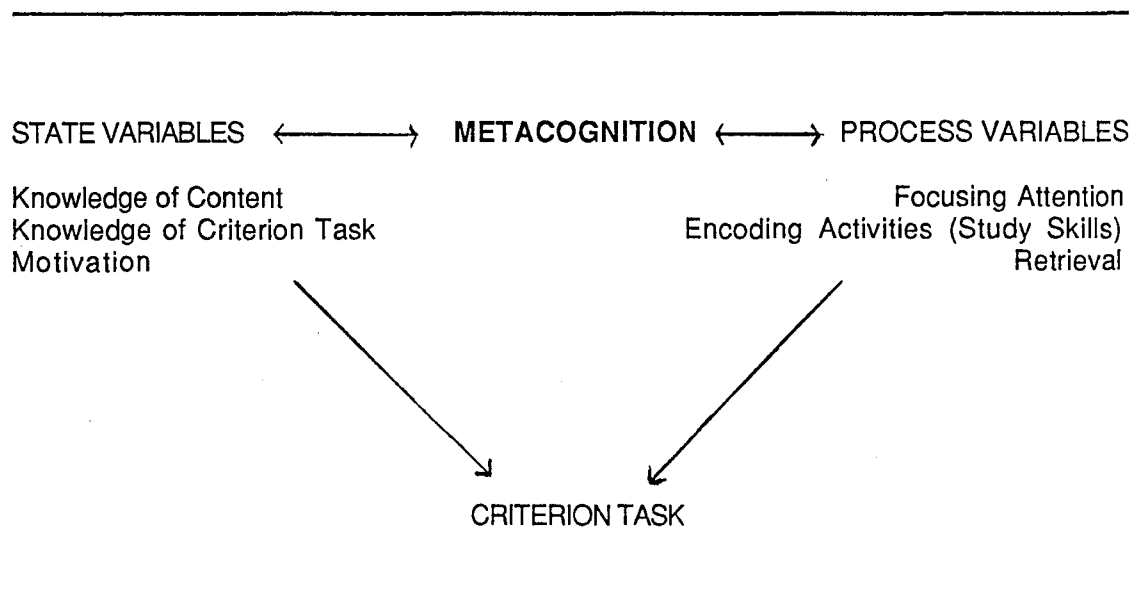
CRITERION TASK

The Teacher as Mediator

Given that study is a special form of behavior that involves state and process variables directed toward a specific criterion task and that it requires the ability of students to monitor their own understanding and their choice of learning strategies, what is the role of the secondary school teacher in developing that behavior? In the past, secondary teachers have assumed that study behavior had been developed in the elementary grades (Herber,

1978; Karlin, 1984). With our current understanding that maturation affects the abilities of students to self-regulate their thought (Piaget and Inhelder, 1969), and that a critical aspect of study is metacognition, the ability to reflect upon our own cognitive processes (Anderson and Armbuster, 1984b; Baker and Brown, 1984), we now realize that such assumptions are faulty and unrealistic (Herber, 1978; Nisbet and Shucksmith, 1986). (Assumptions of secondary teachers regarding the status of students as independent learners is discussed further below. See the sub-section entitled, "Instructional Time," page 54.)

Secondary teachers do have a critically important role in developing the study behavior of their students (Brown, Campione, and Day, 1981; Marshak and Burkle, 1981; Marzano and Arredondo, 1986). In this role, secondary teachers are *instructional mediators* (Hinsdale, 1900; Brown, 1982; Jones, 1986). Because teachers are subject-matter specialists who best know their content and the academic demands of learning it (Shepherd 1982), teachers serve to *mediate* between the text and the learner. In instructional mediation, teachers intercede between textbook material--printed content ideas--and students in order to lead students overtly in the processes of learning and studying (Jones, 1986). By leading students overtly in study processes, teachers are assigning significance to specific study behaviors through modeling and by the very fact that instructional time has been devoted for students to learn them.

Thus, teachers as instructional mediators establish the significance and meaning of a given activity by structuring it as a social interaction. In this instance, the social interaction occurs within the classroom milieu. As instructional mediators leading students overtly in the process skills of learning content within a social context, teachers set a goal of eventually leading students to *internalize* the procedures so that they become self-initiated learning behaviors (Heiman, 1985a). The concept of internalization as a function of social interaction is a major contribution of Vygotsky who proposed that the significance of an act is determined by the meaning or interpretation given to it by others through social interaction. A specific activity remains a *tool*, or an externally-oriented activity, until sufficient development of skill has occurred so that it becomes a *sign* , or internally-oriented activity. The shift from an activity being externally-oriented to internally-oriented is the process of *internalization* (Vygotsky, 1978). Internalization is the critical element in order for training in study skills to be successful: students must become so familiar with a given study procedure that they will initiate its use in a task-appropriate situation (Campione and Armbruster, 1985).

To that end, then, as mediators whose goal is the internalization of certain study behaviors, teachers work with students along a continuum of teacher/student control of learning (Pearson and Gallagher, 1983). This continuum consists of teacher responsibility on one end, where teachers model and demonstrate

the skill to be learned, to student responsibility on the other end, where students apply the skill that has been learned. Over a substantial period of time (several weeks and perhaps months), teachers provide for a gradual release of control from teacher to student as internalization of the activity occurs (Brown, 1982). Teachers can determine if internalization has occurred by observing the extent to which students select an appropriate procedure for a given study task. The classroom milieu, therefore, becomes the setting for both instruction of reading study skills and evaluation of how well students have progressed in internalizing, i. e., appropriately utilizing, them.

Although such skills instruction would seem to require all available instructional time, in reality the most important element appears to be the instructional orientation of teachers. Teachers do not sacrifice content in order to develop the independent learning skills of their students. Rather, if teachers are equally oriented to the development of process skills of students as they are to the acquisition of knowledge by students, they incorporate study skills instruction into their content lessons as a "natural" element of instruction. Results of training studies conducted by Baker and Brown (1984) indicate that such training can occur in regular classroom settings. On the basis of their success rate in training students in reading study skills, they concluded:

> . . . From a practical point of view, it is clear that
> we can train the cognitive skills for comprehending and
> studying texts even with students who would be regarded
> as recalcitrant by many teachers. This training can be
> carried out under the pressure of normal classroom
> settings. And it does result in worthwhile and reliable
> improvements. . . . Study skills can be trained, and such
> training can be durable and generalizable (pp. 386-87).

Thus, teachers go about their regular content lessons, but with

attention to making the processes of learning overt and providing

for guided application and practice of those skills with the

eventual goal of releasing more control of the processes to

students. Additional instructional time is required; however,

benefits frequently include improved student motivation (Heim,

1984; Knapp, 1972) and improved ability to perform the necessary

skills to do well in subject matter courses (Butterweck, 1926;

Colwell, 1980; Donald, 1967; Fenigsohn, 1983; Gross, 1978;

Hansell, 1978). This integrated approach for reading study skills

instruction to occur as part of subject matter instruction is well-

founded in the literature, as the following section details.

An Integrated Approach: Instruction in Content Areas

In the junior high school and high school curriculums, current

thought holds that reading skills in general, and study skills

related to reading, are best developed in the context of the subject

matter courses in which they are needed (Early, 1964; Lurie, 1972;

Hoffman and Condon, 1979; Singer and Donlan, 1980; Harker, 1981;

Marshak and Burkle, 1981; Karlin, 1984; Singer and Bean, 1984;
Robinson and Jennings, 1985; Marzano and Arredondo, 1986).
Graham and Robinson (1984) state, "Though teachers of reading give
some attention to study skills, much of the direct instruction in
techniques of study should come in subject matter areas. . . . (p. v)."

A significant advantage accrues from integrating instruction
of process skills "across the curriculum." Instruction in each
subject area enables students to immediately apply skills to
specific content to be learned, thereby reducing the problem of
transfer when skills are taught out of context. When skills are
taught apart from the situation in which they are applicable,
transfer to relevant situations may not occur (Lurie, 1972; Cottier
and Koehler, 1978; Brown and Palinscar, 1982; Singer and Bean,
1984; Campione and Armbruster, 1985). The importance of
immediate applicability to content area reading tasks is reflected
in the reading course requirement that a majority of states has
adopted.

The Reading Course Requirement for Secondary Teacher Candidates

Legislative action of numerous states confirms the
importance of teaching general reading skills throughout academic
subject areas. Nationally, as of 1983, thirty two states (63
percent) had adopted a reading requirement for state certification
of all academic content area teachers at the secondary level.
Another five states (10 percent) had a reading requirement for

English/language arts teachers, and three states (6 percent) were considering adopting a reading requirement for content area teachers (Farrell and Cirrincione, 1984). California mandated such a requirement for the preparation of secondary-level academic subject area teachers in 1972.

The most common means for fulfilling the reading requirement in the states which have adopted one, is the completion of a formal, university/college credit-hour Reading methods course (Farrell and Cirrincione, 1984). This course is intended to acquaint content teachers with aspects of reading relevant to teaching students in a print-dominant curriculum. Among the most common topics included in the Reading methods course is the topic of study skills; in a national survey of college professors of the Reading methods course, study skills ranked second only to comprehension in terms of importance as a topic of necessary instruction for all teachers (Farrell and Cirrincione, 1986). The state-mandated nature of this course, and the presence of study skills as a primary topic of it contribute to the view that reading study skills are an essential and critical aspect of what teachers need to implement as part of their instructional program.

In this theoretical framework, ideas were developed about study as a unique form of learning behavior. Study behavior can be taught through instructional mediation, an instructional perspective that requires teachers to overtly lead students in the

processes of learning and studying with the intent of having students internalize the processes. Once internalized, the processes of learning--study skills--will become self-initiated study behaviors.

An integrated approach to teaching reading study skills is well-supported in the literature. In an integrated approach, instruction occurs throughout the curriculum by subject matter teachers in conjunction with teaching their content. This approach is validated by legislation of a majority of states that requires completion of a Reading methods course as part of the professional preparation of secondary academic subject matter teachers. The literature provides, therefore, a sound theoretical base for the necessity and viability of content area teachers to engage in the direct instruction of reading study skills.

The Questionnaire: Specific Reading Study Skills for Instruction

The identification of which study skills to teach is a critical issue of instruction (Dansereau, 1985). Because no general agreement exists regarding which specific skills ought to be included for direct instruction (Karlin, 1984; Shepherd, 1982), two criteria were utilized in selecting skills for the focus of this investigation. One criterion was the frequency that a particular skill appeared as a major variable in a research study or appeared in a recommended list of study skills for instruction by scholars in

the field. The second criterion was the extent to which a particular skill was defined in terms of enabling students to undertake independent study.

The choice of these criteria derives from the frequent listings of "study skills to teach" in the literature and the commonly-cited goal of student independence.

> . . . As might be expected, different scholars in the literature have different lists of the reading-study skills. Yet, each uses as a core the techniques of studying assignments independently. In fact, the goal of the study skills is total independence in gaining information (Shepherd, 1982, p. 99).

On the basis of frequency and relevance to independent learning, twelve skills emerged for direct instruction of secondary pupils. Each skill is identified and discussed in the following paragraphs.

1. *The ability to survey.* Surveying material is an overview technique for discovering the major ideas and organizational pattern of material prior to reading. Research with secondary students to ascertain the effectiveness of surveying as a discrete study skill does not appear in the literature. However, as a pre-reading study skill, it is well supported in theory.

That theory is that surveying provides focus for reading by revealing the general plan of ideas, enabling better attention to the material during reading (Raygor, 1970). One way students can create focus for reading is to pose questions regarding the content to be read on the basis of surveying the material (Karlin, 1984).

These questions, in turn, serve as specific purposes for reading, an important factor in reading for understanding (Anderson, 1980). Surveying is also a means by which learners may become aware of their background knowledge of the topic: when surveying, one compares what is already known about a subject with the ideas to be presented (Palinscar and Brown, 1983; Karlin, 1984). In this manner, surveying serves to accomplish a fundamental principle of learning: that of linking the "new" with the "old." The importance of surveying as a self-initiated behavior is evident in an analysis of literature related to reading/study strategies in which surveying is the beginning point for carrying out such well-accepted independent study strategies as SQ3R and PQRST (See *The ability to use a textbook reading/study strategy*, below).

2. *The ability to predict content.* This study procedure follows logically from conducting a survey of material prior to reading. From a preliminary survey, students make predictions of what ideas are contained in the material (Frederick, 1938). Prediction allows learners to anticipate both the content of ideas and the process by which the writer conveys the ideas (Graham and Robinson, 1984). Prediction occurs in an on-going fashion during reading as well. Surveying and predicting may be used on each logical "chunk," or portion, of material. After surveying and reading an initial portion of material, the information gained from it enables prediction of the next portion to be read (Pearson and Gallagher, 1983).

Prediction is one of four major comprehension-fostering and comprehension-monitoring activities identified by Brown and Palinscar (1982) and Palinscar and Brown (1983) as appropriate for direct instruction to pupils. Together with summarizing, questioning, and clarifying, predicting content represents an "active aggressive interaction with texts (Palinscar and Brown, 1983, pp. 4-5)" which both enhances comprehension and gives students the opportunity to check whether comprehension is occurring.

3. *The ability to identify main ideas.* The skill of identifying major ideas and the ability to discern between main ideas and supporting details is an important one. It is a fundamental, requisite skill for several other study procedures (Jolly, 1974): summarizing, outlining, notetaking, and constructing diagrammatic representations of text. In each of those procedures, the reader begins with identification of main ideas in order to organize and translate them into another form. As an underlying skill for procedures that involve organization and translation, identifying main ideas serves as a selection and evaluation skill (Karlin, 1984).

In developing the ability to identify main ideas, Armstrong (1956) proposes teaching students to identify topic sentences of paragraphs. Karlin (1984) emphasizes instruction for students in identifying main ideas of paragraphs and longer selections and in distinguishing between relevant and irrelevant material.

Dansereau (1985) describes a learning strategy system in which comprehension/retention and retrieval/utilization of information are accomplished through a five-step procedure: Understand, Recall, Detail, Expand, Review. In the Recall step, three sub-strategies are taught: analysis of key concepts, networking, and paraphrasing. The "analysis of key concepts" sub-strategy emphasizes discovering the interrelationships among main and subordinate ideas.

Baker and Brown (1984) identify selecting and studying main ideas as a major study component which is related to maturation. As a gradually developing ability, students gain increased skill in identifying main ideas as a result of gaining insight into the working of their memory and thought processes. Teachers can help facilitate this process by providing training in active strategies that require identification and retention of main ideas as a requisite task for learning content.

4. *The ability to interpret and use textbook organizational devices.* The structure of textbook ideas is commonly revealed through certain organizational devices such as chapter titles, headings, major and subordinate sub-headings, changes in type face or type color, and introductions and summaries. The ability to interpret and use these devices is a "tool" skill for the three study skills discussed above: surveying, predicting content, and identifying main ideas.

During a preliminary survey of material, students learn to focus their attention on these organizational devices in order to discover the order of ideas and structure of the text. Frequently, titles, headings, and sub-headings represent the major ideas of the material; thus, awareness of organizational devices contributes to identifying main ideas. Having discerned major ideas and the structure of text, learners can review what they already know about the subject and predict what specific information will be presented. Skill in interpreting organizational devices also contributes to the pre-reading study skill of posing questions; in preparing to read, students pose questions based on headings, sub-headings, and summaries of information (See *The ability to generate or pose questions,* below).

In addition to contributing to pre-reading study procedures, the ability to discern text structure aids in organizing and translating material after reading. In a study of the efficacy of three types of skill training, Bean, Singer, Sorter, and Frazee (1983b) found that an experimental group of high school students with prior training in summarization and who received additional training in constructing graphic organizers outperformed another experimental group which engaged in constructing graphic organizers alone and the control group which engaged in outlining. The researchers attribute the success of the summarization/graphic organizer group to the systematic nature of the instruction students received in constructing graphic

organizers and to their prior training in summarization. An essential aspect of that training was developing an awareness of the structural features of text from which they could sort out and reconstruct text concepts, tasks which summarizing and constructing graphic organizers require.

The relevance of knowledge of text structure for translating text ideas is reinforced by Anderson and Armbruster (1984b) who recommend that students be trained to recognize basic text structures in order to construct idea maps of information. Baker and Brown (1984) term "making use of the inherent structure of text" as an essential component of effective study. Although coming to understand textbook structure is not limited to the interpretation and use of textbook organizational devices, direct instruction in organizational devices will provide students with the means by which they can compare prior knowledge, pose questions, and discover main ideas before reading (Robinson, 1970; Karlin, 1984) and which may help facilitate their attempts to organize and translate ideas after reading.

5. *The ability to generate or pose questions.* For study purposes, students may engage in posing questions from text before reading, during reading, and after reading. At whatever point the questions are generated, the end goal remains better comprehension and retention of material.

Questioning as a study technique is widely accepted as one of the most effective study behaviors in which students can be

trained. Research conducted by Andre and Anderson (1978-79) examined the efficacy of student questioning as a study technique. In one study of high school seniors, an experimental group received training in questioning and a control group followed a read/reread procedure. In another study of high school juniors and seniors, students were placed in three treatment groups: one group received training in questioning, one group received no training in questioning but was asked to pose questions on the material read, and one group followed a read/reread procedure.

For both studies, the researchers found a significant main effect for the experimental groups that had been trained in the questioning technique when asked to perform a criterial task. In discussing possible explanations for the study effectiveness of the questioning procedure, Andre and Anderson note the high degree of processing that is involved in identifying main ideas and transforming them into questions. That process necessarily entails a deeper semantic analysis of text ideas than a read/reread approach. They further discuss self-questioning as an effective study technique which encourages metacognitive behaviors of students by providing purposes for reading, identifying important segments of material, generating questions requiring comprehension of the text to answer correctly, and thinking of possible answers to the questions.

Two major reviews of research literature concur in the view of questioning as an important processing activity. Anderson and

Armbruster (1984b) note that generating questions is similar to notetaking: a written record is made of selected information, but in question format. The processing effort required to generate questions results in studying gains because of the transformation of text that occurs when ideas are posed as questions. Baker and Brown (1984) view self-interrogation of text material as a cognitive activity which occurs in almost every description of critical reading. As a critical reading skill, it fosters better comprehension and enables students to check if comprehension is occurring. " . . . . The ability to ask relevant questions of oneself during reading is, of course, crucial to comprehension monitoring and studying. Thus, training in effective question asking may be an important first step in the development of monitoring skills. . . (p. 372)."

Questioning is one of the most frequently recommended actvities in lists of recommended study skills. Armstrong (1956) urges students to ask questions about what they read and to predict questions that they will be asked. Raygor (1970) suggests that students read a single section of material at a time, pause at the conclusion of it, and make up a question answered by the material. In addressing professionals, Pearson and Gallagher (1983) maintain that teachers can train students to ask questions about expository material with the goal of students eventually assuming responsibility for the task themselves. Anderson (1980) terms questioning a " . . . . translational scheme for remembering . . ." and

Brown (1982) cites questioning as one of the most common study strategies used by experts and one of the skills characteristic of proficient readers.

Questioning may be utilized in conjunction with other study skills. In combination with summarizing, it can result in greater retrieval of stored information than simple reading/rereading of material (Bean, Singer, Sorter, and Frazee, 1983a). Additionally, questioning is a major component of reading/study strategies, such as SQ3R. (See *Utilizing a Textbook Reading/Study Strategy,* below.) The major advantage of generating questions from reading appears to be the considerable degree of learner-involvement required. "There is wide agreement that active involvement of the student in the reading process facilitates learning from text. . . (Andre and Anderson, 1978-79, p. 607)."

6. *The ability to take notes from text.* Taking notes from text is another organizational skill (Shepherd, 1982) which requires identifying and designating what is important (Locke, 1975). Notetaking is closely aligned with outlining (Shepherd, 1982; Early, 1964); indeed, outlining is a form of notetaking. (See *The Ability to Outline,* below.) Notetaking can function as a comprehension-monitoring activity; if students are able to translate and record main ideas and important information, they have, in effect, checked their understanding of the material (Harris and Sipay, 1985).

In their synthesis of research on notetaking, Anderson and Armbruster (1984b) report that notetaking is effective when the

procedure involves focusing attention and processing ideas in a manner compatible with demands of the required criterial task. As a learning tool (Staton, 1952) and an important reading skill of proficient readers (Brown, 1982), notetaking may be used separately or within a strategy combining notetaking with underlining and making notes in the margin (Locke, 1975).

7. *The ability to paraphrase.* Paraphrasing requires learners to translate text information into their own linguistic patterns. Although no studies of the effectiveness of paraphrasing as a reading study skill are evident in the literature, it is closely aligned with summarizing (Brown and Palinscar, 1982; Dansereau, 1985) as a type of translational strategy which contributes to recall and retrieval of stored information (Anderson, 1980; Dansereau, 1985).

8. *The ability to summarize.* The skill of summarizing text requires students to analyze material for major ideas and reconstruct those ideas in their own words. Studies with high school students by Bean, Singer, Sorter, and Frazee (1983a, 1983b) have examined the benefits of a summarization-with-questioning procedure. In one study, students in the experimental group, utilizing this study procedure, performed significantly better in ability to retrieve stored information for a criterial task than a control group utilizing a read/discuss approach .

In a second study, one experimental group was comprised of the same students who had received training in summarization-

with-questioning of the first study. This group received additional skills training in constructing graphic organizers. A second experimental group received training only in the construction of graphic organizers, and a control group utilized a traditional outlining study procedure. The experimental group with prior training in summarization achieved significantly higher scores on a criterial task than either the graphic organizer group or the outlining group. The researchers attributed the success of the summarization group to the component tasks that summarizing entails: analyzing text features, sorting ideas, reconstructing concepts, and depicting the relationships among them. They concluded that these tasks contribute to the development of higher order thinking which results in successful integration, retention, and retrieval of text concepts.

The work of Brown and Palinscar (1982), Baker and Brown (1984), and Brown, Campione, and Day (1981) has focused on training in summarization as a metacognitive, or self-monitoring, activity. By attempting to reconstruct major ideas, students are able to check their understanding and retention of material prior to performing a criterial task.

> The ability to provide an adequate summary is a useful strategy for understanding and studying texts. . . . A commonly reported sophisticated method of testing one's level of comprehension and retention and, therefore, one's preparedness or a test, is to attempt to summarize the material one has been reading. . . . (Brown, Campione, and Day, 1981, p. 15).

In a major synthesis of research literature, Anderson and Armbruster (1984b) identify summarizing as a study technique likely to be most effective given two conditions: that students receive instruction in how to write summaries and that the demands of the criterion task reflect the kind of processing used in writing a summary.

The skill of summarizing appears frequently in lists of recommended study skills for instruction of students. Karlin (1984), Shepherd (1982), and Tonjes and Zintz (1981) categorize it as a skill of organization and retention; Pearson and Gallagher (1983) and Harris and Sipay (1985) concur with Brown and others that summarization functions as a self-monitoring activity; Frederick, Ragsdale, and Salisbury (1938) term summarization ". . . a special study learning skill . . ." and Staton (1952) calls it ". . . a tool of learning." In emphasizing skills most relevant to success in content areas, Butterweck (1926) maintains, " . . . our high school pupils not only should be acquainted with the best way of outlining and writing a summary but also should be so familiar with their use that they have become an habitual tool. . . (p. 48)."

9. *The ability to outline.* Constructing an outline of text material represents an organizational task which requires the ordering of ideas. Outlining is one of the most traditional study skills, appearing in study skills literature as early as 1916 (Whipple, 1916).

Because it is well established as a study technique with which students are expected to be familiar, Bean, Singer, Sorter, and Frazee (1983b) studied the effectiveness of outlining in comparison with the newer procedure of constructing graphic organizers (See *Constructing Diagrammatic Representations of Text*, below.) Their study involved three groups of students: one experimental group had received prior training in a summarization-with-questioning procedure and were trained for this study in the use of graphic organizers; one experimental group without prior training in summarization or questioning received training in the use of graphic organizers; a control group utilized outlining. Both experimental groups outperformed the outlining group, but the group with prior training in summarization-with-questioning performed significantly better than the other two groups on a criterial task.

In discussing their results, the researchers theorize that outlining may encourage lower-level thinking skills associated with rehearsal and rote memorization. The experimental group with prior training in summarization-with-questioning, in contrast, were involved in a deeper analysis of the material resulting in greater integration, retention, and retrieval of material.

Although its effectiveness may remain uncertain when compared to other study skills or combinations of skills, outlining, in theory, is considered to be an especially important skill by

scholars. Lists of recommended study skills include the following benefits and descriptions. As an ordering skill, it leads students to a greater awareness of logical organization (Early, 1964) and enables students to organize material for study (Armstrong, 1956; Shepherd, 1982; Tonjes and Zintz, 1981). It is a basic thinking skill (Frederick, Ragsdale, and Salisbury, 1938), an important tool of learning (Staton, 1952), and it is a skill which proficient readers demonstrate (Brown, 1982). Because outlining requires producing an alternative representation of text, it requires a depth of processing which helps focus attention (Anderson and Armbruster, 1984b) and retain information (Anderson, 1980; Karlin, 1984; Harris and Sipay, 1985).

10. *The ability to construct diagrammatic representations of text.* The most recent development in study techniques, diagrammatic representations are non-linear forms that depict relationships among ideas spatially. Constructing diagrammatic representations of text requires identifying major concepts and sub-ordinate ideas, discerning relationships among them, and translating them into diagram form.

The term, *diagrammatic representations,* is selected as the most general term for indicating any one of several types of diagram techniques recommended for instruction in the literature. The term is suggested by Anderson and Armbruster (1984b) who describe three closely-related diagramming procedures-- schematizing, mapping, and networking--as ". . . techniques for

representing text diagrammatically (p. 673)."

As a new study technique, very little research has been conducted into the study effectiveness of diagramming procedures for secondary students. Research by Bean, Singer, Sorter, and Frazee (1983b) focused on the use of graphic organizers by two experimental groups of high school students: one group who had received prior training in summarizing-with-questioning and one group without prior training. Both groups received training in the use of graphic organizers. The graphic-organizer group with prior training in summarizing-with-questioning outperformed both the second graphic-organizer group and a control group that utilized outlining; however, subjects in both graphic-organizer groups ". . .successfully expanded their limited repertoire of study strategies. . . (p. 21)."

Though research is scant, wide acceptance appears in current reading literature for the efficacy of constructing diagrams as a study technique because of the depth of processing demanded in transforming text into an alternate form. Other terms appearing as labels for the basic idea of transforming text ideas into diagrams are: *graphic organizers* (Bean, Singer, Sorter, and Frazee, 1983b); *mapping* (Tonjes and Zintz, 1981; Brown, 1982; Graham and Robinson,1984; Heiman, 1985a; Anderson and Armbruster, 1984); *networking* (Brown, 1982; Dansereau, 1985; Fenker, 1981); and, *schematizing* (Anderson and Armbruster, 1984).

11. *The ability to recite material.* Recitation of information

typically follows reading in order to retain the ideas to be learned (Anderson, 1980; Robinson, 1970). In recitation, learners recite answers to the questions that they posed before or during reading (Raygor, 1970; Karlin, 1984; Frederick, 1938).

Recitation is a major element of major reading/study strategies such as SQ3R (Robinson, 1970). In a variation of SQ3R, recitation is represented as the State step of PQRST. (See *The ability to use a textbook reading/study strategy*, below.) In explaining how recitation benefits learners, Tadlock (1978) explains that reciting what is to be learned slows down the input of information thereby giving the mental processing system the necessary time that is needed to transfer information from short-term memory to long-term memory.

12. *The ability to use a textbook reading/study strategy.* A reading/study strategy is a study procedure which combines several separate discrete skills to form a sequence by which information can be processed and retained. These study procedures represent a powerful approach to the entire reading/study task, from initial contact with material to be learned through periodic review of stored information. Although the different types of reading/study strategies differ from one another in terms of exact component skills or sequence of skills, most exhibit three distinct phases: a pre-reading stage in which learners engage in preliminary activities intended to prepare them for the reading task; a reading stage; and, a post-reading stage in which learners

engage in activities intended for processing information and storing it in long-term memory (Shepherd, 1982; Tadlock, 1978).

The best-known and most widely accepted and recommended reading/study procedure is SQ3R, first proposed by Francis P. Robinson in 1946. This procedure is so widely respected that it has become a standard by which to compare other study procedures (Armstrong, 1956; Dansereau; 1985; Singer and Donlan, 1980). Robinson devised the first three steps of SQ3R--Survey, Question, Read--after observing how little information students were able to retain immediately after a reading task. When his students applied the first three steps, their performance on a task requiring immediate recall greatly improved. However, retention after a two-week interval was still poor. When he initiated review sessions after reading, retention of material two weeks after initial reading was improved from 20 percent to 80 percent. This remarkable change in the level of retention prompted him to add the last two steps to his study strategy: Recite and Review (Robinson, 1970; Forgan and Mangrum, 1985).

The SQ3R reading/study strategy combines three of the specific skills reviewed above--surveying, questioning, and reciting--with a fourth skill, reviewing. A full description of each step in implementing SQ3R follows.

Survey. The reader skims headings and the final summary paragraph to discover the "core" ideas of the passage. This step

serves, then, as an orientation to the content and assists the reader in keeping ideas organized during reading.

Question. The reader turns the first heading into a question. Posing a question arouses curiosity and brings into the reader's mind previous knowledge of the topic. By formulating a question, the reader is encouraged to distinguish between main points and details.

Read. The reader reads to the end of the first section of material with the specific purpose of seeking the answer to the posed question. Reading becomes an active search for meaning.

Recite. The reader looks away and recites the answer to the question in his/her own words and attempts to think of an original example or application of the idea. At this point, the reader may also record cue phrases in outline form on a separate sheet of paper. (After processing the first portion of material, the reader repeats the **Question, Read, Recite** steps for each remaining portion.)

Review. When the entire lesson is completed, the reader looks over all notes to get an overview of the major points and the relationships among them. The reader checks his/her memory by reciting answers to questions on major sub-points (Robinson, 1970).

Two research studies have examined the efficacy of SQ3R for use with secondary students. Donald (1967) investigated the effect of using the SQ3R study method to increase the reading and

social studies achievement levels of seventh-grade students. The control group was led in a traditional method of studying assignments which included group work, oral and written reports, silent and oral reading of text, answering questions and completing frequent check-up tests. The experimental group received training in the steps of SQ3R with related instruction in finding main ideas, using signal words and sectional headings in a book, determining relationships among ideas, and taking notes.

The researcher found that the students in the experimental group utilizing SQ3R performed significantly better in factual knowledge of content material. Other benefits, although they did not represent statistically signficant differences, included better powers of organization, association, and critical thinking among the SQ3R students and improvement in general reading ability for the SQ3R students. On the basis of teacher observations, the students utilizing SQ3R developed a greater sense of independence in being able to attack new content material.

Galloway (1983) investigated two reading study methods, SQ3R and a mapping technique, to determine which is most beneficial for helping students read and study. Seventh-grade students were randomly divided into three groups, two experimental groups and a control group. Students in the control group used no formal reading study method. In addition, each group was divided into three achievement levels on the basis of standardized test scores. The researcher found no signficant

differences across achievement levels in performance between students utilizing SQ3R and students using no formal reading study method. However, students of middle achievement levels in both experimental groups, SQ3R and the mapping technique, significantly increased their scores.

Although results of investigations into the efficacy of SQ3R as a study procedure, such as these two research studies with secondary students, appear inconclusive (Stahl, 1984), widespread agreement exists among theorists for its potential to enable student independence in learning (Roe, Stoodt, Burns, 1986; Shepherd, 1982; Early, 1964; Forgan and Mangrum, 1985). Robinson (1970) maintains that the procedure meets all criteria for an efficient study skill: it enables students to select what they are expected to know, comprehend those ideas rapidly, fix them in memory, and review efficiently for examinations. In describing a total secondary reading program, Early (1964) strongly urges that students acquire a high level of proficiency in SQ3R. ". . . For most secondary students the ability to survey, question, read, recite, review . . . will be basic to success in the high school curriculum (p. 53)."

> The SQ3R Study Strategy that Robinson introduced many years ago has withstood the test of time. It has been widely accepted because the strategy serves as an advance organizer, provides specific purposes for reading, provides self-comprehension checks, and fixes information in memory. . . (Forgan and Mangrum, 1985, p. 178).

The SQ3R reading/study strategy is the model upon which several other strategies are patterned. Whereas SQ3R is accepted as a general study strategy applicable to all content areas (Massey and Moore, 1965; Early, 1964; Dansereau, 1985), variations include PQRST (Preview-Question-Read-State-Test) for science content (Staton, 1952), SQRQCQ (Survey-Question-Read-Question-Compute-Question) for mathematical word problems (Fay, 1965), and EVOKER (Explore-Vocabulary-Oral reading-Key ideas-Evaluation-Recapitulation) for the study of literature (Pauk, 1963).

Other variations include modifications of the original SQ3R study strategy. These include PQ5R (Preview-Question-Read-Record-Recite-Review-Reflect) which incorporates the additional steps of Record and Reflect (Graham and Robinson, 1984) and SQR^{1}R^{2}R^3 (Survey-Question-Read-Recite and 'Rite-Review) which incorporates a writing step (Hafner, 1977). Other reading study strategies represent parallel steps to those of SQ3R. One of these is REAP (Read-Encode-Annotate-Ponder), a general study method designed to help improve the writing and study skills of students (Eanet and Manzo, 1976), and PARS (Purpose-Ask questions-Read-Summarize), another general study method intended to simplify the SQ3R procedure by combining the last two steps into one (Tonjes and Zintz, 1981).

The foregoing review contributes insight into research and scholarly thought relevant to the twelve most commonly

recommended reading study skills for instruction to secondary students. From the review, the following observations are made: 1) research into the efficacy of reading study skills for secondary students is scant; 2) findings of research that has been conducted do not yield conclusive evidence for determining which skills are most valuable for student learning; 3) in spite of such limited empirical evidence, scholars share a common view of reading study skills as critical learning skills that must be a focus of teacher effort when planning and implementing instruction.

Explication of the content of the questionnaire continues in the next major section. Literature related to three dimensions of reading study skills instruction is reviewed.

The Questionnaire: Dimensions of Importance, Instructional Time, and Ability

In this section, research and scholarly opinion is explored related to three issues of reading study skills instruction: the importance of instruction of reading study skills for student success; the extent to which secondary teachers devote time to reading study skills instruction; and, current ability levels of students to perform reading study skills. Discussion of literature relevant to each of these issues, or dimensions, of instruction provides a background against which to view data obtained from teachers who participated in this study.

Importance

Scholars agree on the importance of providing reading study skills instruction for secondary students. As students move from the elementary grades to the secondary grades, an increasing degree of independence is demanded (Hoffman and Condon, 1979; Graham and Robinson, 1984). Because print is the primary medium of instruction at the secondary level (Palmer, 1978; Roe, Stoodt, and Burns, 1983), reading becomes the primary medium through which students receive instruction and from which they are required to learn (Olson and Ames, 1972; Palmatier, 1974; Palmer, 1978; Brown, 1982). Simply stated, the shift in learning from elementary to secondary grades is represented by the shift from learning to read, to reading to learn (Roe, Stoodt, and Burns, 1983; Graham and Robinson, 1984; Harris and Sipay, 1985).

At the same time as they are required to assume more responsibility for their own learning, secondary students confront complex textbook material which is characterized by technical vocabulary, high density of concepts, and unfamiliar expository writing styles and patterns of organization (Olson and Ames, 1972; Roe, Stoodt, and Burns, 1983; Karlin, 1984). Frequently, textbooks utilized in secondary classrooms for instruction are written in such a way, and at an inappropriate readability level, that they directly contribute to comprehension and learning problems (Janz, 1970; Anderson and Armbruster, 1984a). Moreover, not only must

they comprehend complex material independently, secondary students must retain information from textbooks over a period of time and exhibit the ability to retrieve the information for taking tests or performing other grade-related tasks (Harris and Sipay, 1985; Anderson and Armbruster, 1984b).

These factors considered together, therefore, pose a significant challenge to the basic reading abilities with which students leave the elementary school. Continued reading instruction, especially in the skills necessary for independent reading and studying, is critical to the success of most secondary students (Herber, 1978; Karlin, 1984; Roe, Stoodt, and Burns, 1983; Forgan and Mangrum, 1985; Santeusanio, 1983; Hafner, 1977).

The importance of reading study skills instruction may be further considered in reference to two major current issues of secondary education: How may we retain greater numbers of students through high school graduation? and, How may we better prepare high school graduates for the academic rigor of college studies? The following sections discuss the importance of instruction in reading study skills as it relates to particular learning needs of students "at risk" academically and of students who are college-bound.

Retention of Students. Reading study skills instruction may hold promise for efforts to address the current crisis of students dropping out of high school. Nation-wide, one of every four students who enrolls in school leaves before graduating from high

school (Boyer, 1983). In California, three out of ten students "drop out" before graduation (Assembly Office of Research, 1985). Furthermore, youngsters begin to leave school in the junior high school years (Boyer, 1983), those years when they first confront the increased academic demands of the secondary grades.

Analyses of longitudinal data from recent major national studies reveal some of the characteristics of students who leave school early. Among reported characteristics are poor school performance, resulting in poor grades and course failure (Assembly Office of Research, 1985; Whelage and Rutter, 1986); alienation from school life and a lack of satisfaction with their education (Ekstrom, et. al., 1986; Whelage and Rutter, 1986); and, a sense of powerlessness (Ekstrom, et. al., 1986). Students ". . . leave high school because they do not have much success in school and they do not like it . . . (Whelage and Rutter, 1986, p. 376)."

Evidence exists that training in reading study skills can promote success in school. While this training may be advantageous to all students, certain documented benefits appear to have especially significant implications for students "at risk." Some of these benefits are: improved achievement in comprehension (Bean, Singer, Sorter, and Frazee, 1983b; Palinscar and Brown, 1983; Donald, 1967; Galloway, 1984; Garty, 1975; Heiman, 1985b; McCan, 1983); improved ability to perform the necessary skills to do well in subject matter courses (Butterweck, 1926; Colwell, 1980; Donald, 1967; Fenigsohn, 1983; Gross, 1978;

Hansell, 1978); and, growth in academic attitude and positive self-concept (Heim, 1984; Knapp, 1972).

Moreover, scholars conclude that a strong instructional program of reading study skills training at the secondary level can result in improved over-all retention of students (Bean, Singer, Sorter, and Frazee, 1983b; Palinscar and Brown, 1983; Pezzullo, 1984; Heiman, 1985b). Because many students who are "at risk" have a history of poor academic achievement and failure (Schwartz, 1982; Whelage and Rutter, 1986), evidence suggesting that study skills training is most effective for low-achieving students, or students of lower verbal ability, is especially noteworthy (Butterweck, 1926; Frederick, Ragsdale, and Salisbury, 1938; Andre and Anderson, 1978-79; Cottier and Koehler, 1978; Brown, 1982; Marzano and Arredondo, 1986).

Preparation of College-Bound Students. The need for study skills instruction extends to those students for whom high school is preparation for the rigorous demands for independent learning that college will impose. The proliferation of learning skills centers on college campuses, which generally emphasize courses in reading improvement and study skills, indicates the low level of preparation for independent learning that characterizes many high school graduates.

In California, the relevance of study skills training for college success also emerges from findings of a major state-wide study. The Learning from Text Project, initiated in 1979, had as one of its

major objectives to determine the relationship between the abilities of students to learn from text and their academic success in the University of California and California State University systems (Bean and Singer, 1983). A major finding of the Project is that the ability to learn from text, assessed in part by the California Study Methods Survey, is an essential element in prediction of freshman achievement:

> . . . ability to learn from text coupled with background information and attitudes toward learning predict freshmen achievement better than the current entrance tests used to admit students to UC and CSU. This finding was not surprising because learning from text is the way students acquire course required knowledge outside of class. . . (Singer and Bean,1986, p. 35).

Because this finding suggests that success in college depends, in part, on the ability to learn independently from text, skills instruction that enables such independence is an important aspect of pre-collegiate preparation. For our highest-achieving students as well, therefore, reading study skills instruction appears to be a critically important aspect of secondary education.

Instructional Time

As important and appropriate as reading study skills are for secondary learners, students receive very little instruction in their use and application (Karlin, 1984; Harris and Sipay, 1985; Pearson

and Gallagher, 1983; Tonjes and Zintz, 1981; Simpson, 1984; Hinsdale, 1900). A true dilemma appears to exist: students require reading study skills instruction because of increasingly greater academic demands and progressively more difficult textbook material, yet secondary schools fail to provide that instruction. What are some underlying reasons for this dichotomy between what students require and what is being provided?

One reason for the lack of instruction is the common assumption by secondary teachers that students will have learned how to study in the elementary grades (Cottier and Koehler, 1978; Karlin, 1984; Herber, 1978). ". . . teachers in the past have too often assumed that high school students were acquainted with study skills . . . (Karlin, 1984, p. 252)." This is the "independence assumed" attitude that Herber (1978) describes so well:

> . . . To prepare students for the independence they will be expected to demonstrate at the "next" grade level, teachers withhold guidance in learning activities, avoid "spoon-feeding," and require independent performance at the current level. Teachers prepare fourth-graders for grade five, fifth-graders for six, sixth for seventh . . . eleventh for twelfth. Then, of course, teachers of high school seniors know that colleges require the capacity for independent study. What better preparation is there than to require students to function independently in the twelfth grade?
> One wonders, not unreasonably, who shows students *how* to become independent readers! Obviously a great responsibility is placed on the shoulders of first- and second-grade teachers who, presumably, prepare students for a life of independent study. At each level

the students' independence is assumed as they are "prepared" for the independence required at succeeding levels. Clearly the students are shortchanged, never being shown how to apply those skills which teachers at each level assume they can handle independently (p. 215).

In addition to the common sense rebuttal offered by Herber, two studies have been conducted that provide greater insight into the validity of assumptions that students will have learned how to study in elementary school. Durkin (1978-79) focused on the amount of time devoted to direct instruction of reading comprehension and study skills in fourth-grade classrooms, fourth grade being the level at which students begin the transition from learning to read to reading to learn. Durkin and her study team took great care to define specific categories of instructional behaviors as the basis for their classroom observations. They observed virtually no direct instruction of comprehension occurring; only one percent of class time was devoted to study skills and related activities and no instance of direct instruction in applying study skills was observed. In a general indictment of the failure of elementary teachers to teach important learning skills in content subjects, Durkin concluded:

Before the present study was undertaken, it had been assumed that at least some of the time they were teaching reading, teachers adhere to a sequence like the following: instruction, application, practice. The data that were collected, however, do anything but support that assumption. Instead, they portray teachers as being

"mentioners," assignment givers and checkers, and interrogators. . . (p. 523).

In their study to confirm Durkin's findings, Neilsen, Rennie, and Connell (1982) observed eight teachers of grades four through six in five schools. The teachers were observed during three successive lessons for a total of twenty-four lessons or 973 instructional minutes. Most lessons were co-observed; inter-observer reliability was .94. In discussing their results, Neilsen, Rennie, and Connell report findings that are similar to those of the Durkin study: in both studies, virtually no direct instruction of comprehension or study skills was observed. In the Neilsen, Rennie, and Connell study, study skills-related activities (not instruction) accounted for 3.2 percent of instructional time as compared to one percent in the Durkin study. Furthermore, the already limited time that was devoted to application of study skills was concentrated on the use of reference materials, specifically the use of an atlas or almanac, rather than strategies for learning from expository text.

Findings of both the Durkin study and the Neilsen, Rennie, and Connell study indicate that assumptions by secondary teachers that students will have been taught reading study skills in the elementary grades are faulty and largely unrealistic: students very likely have not acquired knowledge of how to perform reading study skills nor how to apply and use them on an independent basis. Furthermore, even if elementary-age children have been taught how

to perform a component skill of a study procedure, such as constructing an outline of ideas or summarizing a passage read, discerning when to utilize a skill and initiating its use accordingly will depend upon their ability to reflect upon and monitor their own learning processes. In other words, the actual *execution* of study behavior is regulated through metacognitive understanding, the ability to think about our own thinking. This ability is the major characteristic of the Formal Operations developmental stage of Piaget and, therefore, is not typical of learners who are in elementary school (Piaget and Inhelder, 1969).

Coupled with faulty assumptions regarding the status of secondary students as independent learners, another reason for the lack of instructional time that is allocated to teaching reading study skills in the secondary grades is found in the heavy emphasis on coverage of a set amount of curriculum. This is the *product vs. process* issue where *product* is content knowledge and *process* is the specific way in which content knowledge is to be learned. Secondary teachers frequently focus wholly on acquisition of content knowledge by students, on making sure they "get through the book," with little attention to teaching students how to learn content (Pearson and Gallagher, 1983; Harris and Sipay, 1985). "The status of the teaching of reading and study skills in the classroom appears to be at the same low level as the teaching of reading comprehension in general . . . The main purpose for content-

subject lessons is 'getting the content from the book into the pupils' heads.' . . (Harris and Sipay, 1985, p. 511)."

One other reason for the lack of reading study skills instruction in the secondary grades is that frequently, teachers do not know how to teach the skills (Hinsdale, 1900; Rickman, 1981). This observation lends even greater signficance to the reading methods course requirement for secondary academic subject area teachers: as a requisite component of their professional preparation, this course appropriately is the means by which the importance of reading study skills is communicated and where pre-service teachers receive training in how to teach the skills to students.

Assumptions that students know how to study, an emphasis on product rather than process, and the fact that teachers may not know how to teach the skills preclude adequate instruction of reading study skills for secondary students. Little instructional time appears to be devoted to teaching students how to read and learn from textbook material for themselves.

Ability

Perhaps not suprisingly, since little instructional time appears to be devoted to reading study skills instruction, students in the secondary grades demonstrate very little ability to engage in those skills that enable independent learning and studying from

text (Bean, Singer, Sorter, and Frazee, 1983b; Karlin, 1984; Cottier and Koehler, 1978). As discussed above, secondary teachers have assumed prior training in study skills and appear to give very little instruction related to the processes of learning as an integral part of content instruction. Thus, students remain dependent and without a real sense of control, or power, over the studying demands that they confront. In this sense, then, attending to instruction that enhances the ability of students to engage in successful study is an act of empowering them to take charge of their own learning, providing them with the means for academic success.

Although instruction that empowers all students as successful learners is important, such instruction appears to have especially important implications for students "at risk" academically. As discussed previously in the section entitled, "Importance," since a major school-related factor for students leaving high school before graduation is poor school performance (Assembly Office of Research, 1985; Whelage and Rutter, 1986) and a sense of powerlessness (Ekstrom, et. al., 1986), direct instruction in reading study skills could provide the means by which "at risk" students perform more successfully and gain a sense of confidence in completing academic tasks. ". . . The difference between . . . [grades students earn] . . . may not be

intelligence or even motivation, but may be how well they have mastered efficient study skills as they progress through school (Cottier and Koehler, 1978, p. 630)."

In this section, literature was discussed in relationship to the three instructional issues of Importance, Instructional Time, and Ability. For the issue of Importance, both scholarly opinion and findings of empirical research were evident in the literature regarding the importance of reading study skills for academic success in the secondary grades. For the issue of Instructional Time, the researcher identified no studies that examined specific allocation of time by secondary content area teachers to the instruction of reading study skills. Indeed, no studies have apparently focused on the instructional practices of content area teachers at the secondary level with respect to providing reading study skills instruction. Similarly, for the issue of Ability, no studies were identified that investigated the ability of secondary students to perform reading study skills.

Hence, the conclusion that very little time is spent on reading study skills instruction and the conclusion that secondary students exhibit little ability to perform reading study skills, are founded upon a consensus of expert opinion but not upon empirical evidence. Seemingly, those who are being criticized the most and who are being held accountable for instruction, i.e., secondary content area teachers, have not been asked whether they are, in fact, providing

study skills instruction nor have their perceptions of the abilities of students to perform reading study skills been sought. The present study addresses this dearth of empirical data by seeking information about both the extent to which secondary content area teachers allocate time to the instruction of reading study skills and to their perceptions about the abilities of students to perform reading study skills.

The Questionnaire: Methods for Teaching Reading Study Skills

Instructional practices for teaching reading study skills were identified from the review of literature by tallying those that were most frequently recommended. Specific practices that were recommended at least three times were deemed to represent an important instructional step in training students in reading study skills. The researcher organized the recommended practices that were gleaned from the literature into the skill-development model of instruction which is presented in Figure 3.

This skill-development model represents an instructional sequence similar to the steps of the effective teaching model of Hunter (1984) which has been widely disseminated to practicing teachers through inservice training. The effective teaching model consists of the following steps: Anticipatory set, Objectives and Purpose, Input, Modeling, Checking for understanding, Guided practice, and Independent practice. Although only three steps of

Figure 3

A SKILL-DEVELOPMENT MODEL OF INSTRUCTION

Recommended Teaching Practices for Reading Study Skills Instruction

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1. Describe the skill.[4, 6, 12, 16]

2. Demonstrate/Model the skill.[3, 4, 6, 8, 9, 12, 16]

3. Provide guided practice/application, individual basis.[2, 11, 12, 14, 16]

4. Provide guided practice/application, student groups.[3, 4, 5, 14, 15]

5. Provide feedback to students on practice attempts.[1, 3, 4, 6, 7, 11, 12]

6. Explain the benefits of using the skill.[1, 9, 16]

7. Explain when to use the skill.[9, 10, 16]

8. Encourage students to use the skill independently.[1, 6, 11]

9. Provide follow-up reinforcement.[3, 13, 17, 18]

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Proposed by:

[1]Baker and Brown, 1984
[2] Brown and Palinscar, 1982
[3] Bean, Singer, Sorter, and Frazee, 1983b
[4] Dansereau, 1985
[5]Frederick, Ragsdale, and Salisbury, 1938
[6] Harris and Sipay, 1985
[7] Marshak and Burkle, 1981
[8] Marzano and Arredondo, 1986
[9] McCombs, 1984

[10] Palinscar and Brown, 1983
[11] Pearson and Gallagher, 1983
[12] Simpson, 1984
[13] Singer and Bean, 1986
[14] Singer and Donlan, 1980
[15] Stahl, 1984
[16] Tierney, 1982
[17] Welch, 1978
[18] Zirkelbach, 1984

the effective teaching model actually have similar labels as the skill-development instructional sequence (Modeling, Guided practice, and Independent practice), other steps of the effective teaching model include elements of the skill-development model. "Objective and Purpose" of the effective teaching model includes giving students the rationale and purpose for the lesson; thus, it includes two methods of the skill-development model, "Explain the benefits of using the skill," and, "Explain when to use the skill". Also, "Checking for understanding" includes another step of the skill-development model, "Provide feedback to students on practice attempts." Hence, almost all of the instructional practices of the two models overlap one another.

Although instructional methods are similar, an important point of distinction exists between the instructional practices identified from the literature for teaching reading study skills and which comprise a skill-development model of instruction, and the steps of the effective teaching model. The effective teaching model is intended for teaching students *content*, whereas the skill-development model is intended for training students in a transferable *skill*. Thus, the effective teaching model is product-oriented and the teacher remains in control of the teaching/learning situation. The skill-development model, on the other hand, is process-oriented: the teacher models the skill and through a progression of development, gradually releases control of applying and utilizing the skill to learners.

The effective teaching model also differs from the skills-development method in terms of time. The development of a skill to be independently applied, or *internalized*, requires much time and practice (Butterweck, 1926; Frederick, Ragsdale, and Salisbury, 1938; Baker and Brown, 1984). Thus, the skills-development model is to be viewed from a perspective of several weeks or even months (Bean, Singer, Sorter, and Frazee, 1983b; Stahl, 1984; Singer and Bean, 1984; Welch, 1978; Zirkelbach, 1984). The effective teaching model, however, is a lesson model: the steps are viewed from a perspective of a certain portion of content to be learned within a few days of instruction.

Because of the similarities between the skills-development model and the effective teaching model, however, and because of the popularity of the effective teaching model, a possibility exists that teachers reported the practices they utilize for teaching content lessons rather than for teaching reading study skills. The implications of this possibility will be discussed further in Chapter 5.

Anticipated Findings Based upon the Review of Literature

Descriptive data were obtained to address the problem of this study: To what extent are academic content area teachers in California secondary schools providing instruction in reading study skills as part of their instructional program? In this section, the

eight analysis questions of the problem and the eleven hypotheses that were tested for statistical significance are restated. Each analysis question and hypothesis is addressed in terms of the review of literature to determine whether the literature provided an adequate basis for anticipating related findings.

The Analysis Questions

For this study, data were gathered with respect to seven teacher variables: subject area taught, grade level taught, ability level taught, gender, number of courses in Reading, number of years teaching, and level of professional preparation. Across all teacher variables, the following anticipated findings were identified.

1. Which specific reading study skills do content area teachers perceive to be important to student success in the subject area in which they teach? The review of literature indicated unanimous agreement among scholars regarding the importance of reading study skills for student success in the secondary grades, and much empirical evidence attests to the benefits of training in reading study skills; therefore, the researcher anticipated that teachers would indicate a high level of importance of reading study skills for student success in their respective subject areas. However, the relative importance of one skill to another skill in terms of student learning was not discernable from the literature. Therefore, no basis existed for distinguishing among the various skills in terms of their importance for student success.

2. To what extent do content area teachers allocate time to the instruction of reading study skills? In reviewing the literature, no studies were located that addressed the allocation of time to reading study skills instruction by content area teachers, but a consensus of professional opinion exists that little instructional time is devoted to such instruction. Therefore, the researcher anticipated that respondents would report that they devote little time to teaching reading study skills.

3. What are the perceptions of content area teachers regarding the current level of abilities of students to perform reading study skills? From the review of literature, no studies were identified that addressed how well secondary students perform reading study skills or that sought the perceptions of teachers regarding the ability levels of students to perform reading study skills; however, a consensus of scholarly opinion exists that secondary students exhibit little ability to apply these skills. The researcher, therefore, anticipated that respondents would indicate low ability levels among students to perform reading study skills.

4. What instructional procedures do teachers utilize in study skills instruction? The researcher anticipated that data will be consistent with expert opinion in the literature, that is, that secondary teachers engage in very little direct instruction of reading study skills. The investigator anticipated, therefore, that teachers would indicate they utilize few, if any, specific

procedures in reading study skills instruction. No evidence exists in the literature that any specific procedures would be more likely to be utilized than other procedures.

5. *To what extent are teachers confident of their ability to teach the reading study skills that students need?* The literature offered no basis for anticipating the nature of the responses.

6. *To what extent is course content conveyed by means of: textbook, supplementary written materials, and discussion/lecture/oral explanation?* The literature offered no basis for anticipating the nature of the responses.

7. *What practical factors encourage and/or inhibit the efforts of teachers to teach reading study skills?* The literature offered no basis for anticipating the nature of the responses.

8. *What assistance or instructional provisions would enhance the efforts of teachers to teach reading study skills?* The literature offered no basis for anticipating the nature of the responses.

The Proposed Hypotheses

Six hypotheses of this study related to discovering differences among the teacher variables of subject area taught, grade level taught, ability level taught, gender, number of courses in Reading, number of years teaching, and level of professional preparation. These hypotheses are:

1. The perceived importance of reading study skills for student success does not differ by teacher variable (**Importance**).

2. The perceived current level of abilities of students to perform reading study skills does not differ by teacher variable (**Ability**).

3. The extent to which content area teachers allocate time to the instruction of reading study skills does not differ by teacher variable (**Instructional Time**).

4. The extent to which course content is conveyed by means of textbook, supplementary written materials, and discussion/lecture/oral explanation does not differ by teacher variable (**Course Content**).

5. The extent to which teachers are confident of their ability to teach reading study skills does not differ by teacher variable (**Confidence**).

6. The instructional procedures utilized in reading study skills instruction are not related by teacher variable.

Anticipated differences by teacher variable were not discernable from the literature for these six hypotheses with the following exceptions: for three hypotheses, those related to **Importance, Instructional Time**, and **Confidence**, the researcher anticipated differences for those respondents who have completed one or more college/university courses in Reading. The researcher bases this prediction upon the following observations. California has required content area teachers to complete a

Reading methods course as part of their professional preparation since 1972. Thus, those who have entered the teaching profession over the last fifteen years will have background in Reading methodology.

Further, the topic of study skills is frequently cited as one of the most important topics of the basic Reading methods course (Farrell and Cirrincione, 1986). Thus, although some practicing teachers may not have received instruction regarding study skills as part of that course, the frequency with which it is included and the high value accorded to it by university/college professors seem to indicate that many practicing teachers will indeed have received professional preparation in the teaching of reading study skills. The researcher predicts, therefore, that that background of knowledge will be evident. Respondents who have completed a Reading methods course will be more likely to consider reading study skills important to student success, to allocate more time to the instruction of reading study skills, and will express greater confidence in their ability to teach reading study skills, than respondents who have not completed a Reading methods course.

For the remainder of the proposed hypotheses, no basis for anticipating the nature of the responses was discernable from the review of literature. The hypotheses as stated in the null form, therefore, were held to be tenable. These proposed hypotheses are:

7. The perceived importance of reading study skills to student success (**Importance**) is not correlated with the perceived

abilities of students to perform study skills (**Ability**).

8. The perceived importance of reading study skills to student success (**Importance**) is not correlated with the extent of instructional time allocated to teaching study skills (**Instructional Time**).

9. The perceived abilities of students to perform reading study skills (**Ability**) is not correlated with the extent of instructional time allocated to teaching study skills (**Instructional Time**).

10. The method of conveying course content is not related to perceived importance of reading study skills (**Importance**), to perceived ability of students to perform reading study skills (**Ability**), or to allocation of instructional time for teaching reading study skills (**Instructional Time**).

11. The extent to which teachers are confident of their ability to teach reading study skills (**Confidence**) is not correlated with the extent of instructional time allocated to teaching reading study skills (**Instructional Time**).

In the foregoing paragraphs, anticipated findings were identified for four of the analysis questions and three of the proposed hypotheses. The anticipated findings were made in reference to information from the review of literature. No basis for anticipating the nature of responses for the other questions and hypotheses was discernable from the review of literature.

Summary

This chapter developed a theoretical framework within which to view study behavior and the important role of teachers in developing the reading study skills of their students. In the theoretical framework, the nature of study was discussed as a unique learning behavior that results from the interaction between state variables and process variables. These variables are regulated through the thinking process of metacognition. Teachers serve as instructional mediators as they guide students in developing appropriate study techniques for learning from text. As mediators, teachers ascribe meaning to a specific study procedure by overtly leading students in learning and applying the procedure. This instructional process consists of a gradual release of control from the teacher to the learner. The eventual goal of reading study skills instruction is internalization of the skills so that they become self-initiated learning behaviors.

The chapter also presented a review of literature related to each of twelve reading study skills that are most commonly identified as important learning skills for direct instruction to students. These twelve skills represent selection and evaluation skills, translation and organization skills, and reading/study strategies. From the review, the following observations were made: 1) research into the efficacy of reading study skills for

secondary students is scant; 2) findings of research that has been conducted do not yield conclusive evidence for determining which skills are most valuable for student learning; 3) in spite of such limited empirical evidence, scholars share a common view of reading study skills as critical learning skills that must be a focus of teacher effort when planning and implementing instruction.

The issues of the importance of reading study skills to academic success, the allocation of time to instruction of reading study skills, and the ability of students to perform reading study skills were also developed by discussion of relevant studies and scholarly opinion. Empirical evidence and scholarly opinion concur regarding the importance of reading study skills for academic success in the secondary grades. Only scholarly opinion, not empirical evidence, is evident for the conclusions that little instructional time is allocated by content area teachers to the instruction of reading study skills and that secondary students exhibit little skill in applying reading study skills.

From the review of literature, the most frequently recommended practices for instruction of reading study skills were tallied and summarized. These nine practices constitute a skill-development model of instruction. Similarities between the skill-development model and the effective teaching model of Hunter (1984) were observed. The two models differ significantly, however, in terms of the focus of learning and of the amount of time required to implement them.

The chapter concluded with anticipated findings of the data drawn from the review of literature. The following chapter shall explicate the procedures utilized in carrying out the study including the development of the questionnaire, sampling procedures, and analysis of data.

Chapter 3

The focus of this investigation was the perceptions and practices of academic content area teachers relative to instruction of reading study skills. The research was descriptive in nature and employed a survey design in which a questionnaire was the survey instrument.

Development of the Survey Instrument

An extensive examination of the literature was carried out in order to identify two major features of reading study skills instruction: discrete skills to be taught and specific procedures to be utilized. References were tallied to determine the skills and procedures most frequently recommended for direct instruction. Twelve reading study skills and nine instructional procedures emerged from this analysis of the literature.

For each of the twelve reading study skills, three dimensions were determined to have relevance. These dimensions are: teachers' perceptions of the importance of each skill for student

success in their class (**Importance**); teachers' perceptions of the ability of students to perform each skill (**Ability**); and, the extent to which teachers allocate instructional time to teach each skill (**Instructional Time**). For each dimension, a rating scale was devised by which respondents indicated their perceptions and practices.

Another aspect of instruction was identified as important for inclusion on the questionnaire. In order to provide insight into data to be obtained for **Importance** and **Instructional Time**, the means by which course content is conveyed to students were identified. Three major means of content delivery are: textbook, supplementary written materials, and discussion/lecture/oral explanation. Percentage ranges were delineated for each means of delivery.

Two methods were employed to assure content validity of the questionnaire. A draft of the questionnaire was submitted to appropriate university advisors for examination of format and choice of skills, instructional procedures, and rating scales. Needed revisions and changes were made. In addition, subject area consultants with the California State Department of Education contributed suggestions for refinement of the questionnaire.

Next, a preliminary form of the revised questionnaire was pilot-tested by six experienced subject matter teachers from the content areas to be investigated. The teachers selected represented three secondary schools and 102 years combined

teaching experience. After completing the questionnaire, the teachers were interviewed by the investigator. Four specific items of information were sought relative to their perceptions: relevance of each questionnaire item; possible ambiguity of any item; the appropriateness of the rating scales; and, general suggestions for changes, additions, and/or revisions of the questionnaire.

Pilot-test results and results of the follow-up interviews were recorded and analyzed by the investigator. On the basis of pilot-test results and additional discussion with university advisors, three open-ended items and one Likert-type item were added to the questionnaire to obtain more detailed data. Additional revisions included providing a choice of three grade-level ranges for "Grade Level Taught" and adding a question regarding whether instruction in study skills was provided as part of respondents' pre-service reading course. The investigator effected the final changes and revisions to the questionnaire.

The Questionnaire

To promote the best possible rate of response, four different forms of the questionnaire were devised, one for each of the four content areas. All forms of the questionnaire were identical except for the heading which indicated the specific content area. (See Appendix C, p.198.) The questionnaire sought the following

demographic data for each respondent: grade level taught, ability level taught, number of college/university courses in reading, level of educational preparation, years teaching experience, and gender. A separate question required respondents to indicate whether information regarding study skills was provided in their pre-service reading course.

The twelve reading study skills identified from the review of literature were listed. Respondents rated each skill along three dimensions on a scale of "1" to "5" where "1" meant *Very Little* and "5" meant *Very Much*. Two of the dimensions addressed perceptions of teachers: Importance and Ability. The third dimension, Instructional Time, addressed practices of teachers. A key was provided for interpreting each dimension. At the end of the list of skills, teachers were asked to identify any other reading study skill which they teach that was not represented on the list.

For the nine instructional procedures identified from the review of literature, teachers were asked to check all those procedures they use when they teach a study skill. At the end of the list of instructional procedures, teachers were asked to identify any other instructional procedure they use that was not listed.

The third portion of the questionnaire asked teachers to report the proportion of course content they convey to students via three mediums: textbook, supplementary written materials, and discussion/ lecture/oral explanation. A series of percentage

ranges was provided in order for respondents to indicate the approximate percentage of content they convey by each medium of instruction. (Responses for these three questionnaire items with totals that exceeded 100 percent were eliminated from the analysis of data. See Table 22, p. 253; Table 26, p. 258; Table 30, p. 263; and Table 34, p. 268.)

A Likert-type question was posed to ascertain the extent to which subject matter teachers are confident of their ability to teach reading study skills. Respondents indicated their agreement to the statement, "I am confident of my ability to teach the reading study skills that students need," along a scale from "Strongly Disagree" to "Strongly Agree."

Three open-response items required teachers to provide additional information. One open-response item required respondents to identify practical factors that encourage or inhibit their teaching reading study skills. Another open-response item asked respondents to identify what assistance or instructional provisions would enhance their teaching reading study skills. A final open-response item provided the opportunity for respondents to propose an additional question for inclusion in the questionnaire and the answer they would give to it.

In addition to demographic and primary data, the questionnaire sought information that would enable a follow-up data gathering procedure. Respondents were given an opportunity to indicate interest in participating in a follow-up telephone interview

ranges was provided in order for respondents to indicate the approximate percentage of content they convey by each medium of instruction. (Responses for these three questionnaire items with totals that exceeded 100 percent were eliminated from the analysis of data. See Table 22, p. 272; Table 26, p. 277; Table 30, p. 282; and Table 34, p. 287.)

A Likert-type question was posed to ascertain the extent to which subject matter teachers are confident of their ability to teach reading study skills. Respondents indicated their agreement to the statement, "I am confident of my ability to teach the reading study skills that students need," along a scale from "Strongly Disagree" to "Strongly Agree."

Three open-response items required teachers to provide additional information. One open-response item required respondents to identify practical factors that encourage or inhibit their teaching reading study skills. Another open-response item asked respondents to identify what assistance or instructional provisions would enhance their teaching reading study skills. A final open-response item provided the opportunity for respondents to propose an additional question for inclusion in the questionnaire and the answer they would give to it.

In addition to demographic and primary data, the questionnaire sought information that would enable a follow-up data gathering procedure. Respondents were given an opportunity to indicate interest in participating in a follow-up telephone interview

regarding the teaching of reading study skills by providing their name and evening telephone number. The questionnaire obtained descriptive data to address the eight analysis questions and to test a total of forty-nine statistical hypotheses. (See Appendix C, p. 198.)

Population, Sample Selection, and Procedures

The population for this study was academic content area teachers who are currently teaching in California secondary schools, grades seven through twelve. Because names of individual teachers in the state by subject area were not available, a random sample of secondary schools was selected from the California Public Schools Directory, 1986 edition. All high schools and all intermediate/junior high schools were identified in the directory. From these, a systematic sample of every tenth school was selected, yielding a sample of 172 secondary schools. Each school was assigned a code number to enable follow-up procedures for non-responding and partially-responding schools.

A survey packet for each principal was assembled. Each packet contained a cover letter to the principal and four questionnaires, each for one teacher of a specific content area. The cover letter to principals contained a brief overview of the purpose of the survey and requested that the questionnaires be distributed to identified teachers. To avoid selection bias,

principals were instructed to distribute the questionnaires to content area teachers whose surnames were closest to a randomly selected letter of the alphabet. (See Appendix A, p. 186, and Appendix B, p. 193.) A total of 172 questionnaires was distributed to teachers of each content area via school principals. A period of eleven days existed between the mailing of the survey packets and the date of request for return of the questionnaires. The initial mailing resulted in 251 total responses (36.5 percent) of 688 questionnaires distributed. Responses from the initial mailing by content area were: English, 65 (37.8 percent); math, 58 (33.7 percent); science, 71 (41.3 percent); social science, 57 (33.1 percent).

A second follow-up mailing was carried out thirty-six days after the first mailing. The second mailing required assembling a packet similar to that of the first mailing for principals of non-responding schools. A half-sheet was added to the original cover letter to principals with a hand-written note asking for their help in distributing the questionnaires. (See Appendix D, p. 203.) In addition, special packets were assembled for partially-responding schools. These packets included a new cover letter to principals expressing appreciation for distributing the original questionnaires and listing the content areas in the school that were not represented in the initial return of questionnaires. Another questionnaire for each non-responding content area was also included. Principals were requested to re-distribute the

questionnaire to the same or another teacher of each non-responding content area. Again, to avoid selection bias, principals were asked to distribute the second questionnaire to a content area teacher whose surname was closest to the originally-designated letter of the alphabet. (See Appendix E, p. 212.) The second mailing resulted in 123 responses (an additional 17.9 percent).

The total number of respondents for both mailings was 374 or 54.4 percent. Total responses by content area were: English, 92 (53.5 percent); math, 94 (54.7 percent); science, 103 (59.9 percent); and, social science, 85 (49.4 percent).

To gather additional, in-depth information from teachers, the researcher conducted telephone interviews with respondents who indicated a willingness to participate in a follow-up interview. A stratified random sample was identified on the basis of content area. This procedure required that all respondents who agreed to be interviewed be identified for each content area. For each content area, every third name was selected to form a pool from which to select interviewees. From each of the four pools that the sampling procedure yielded, respondents were called in a uniform order which was determined by selecting from a table of random numbers.

A total of twenty respondents were interviewed over a five-week period. Teachers who were interviewed were asked to respond to additional follow-up questions derived from a preliminary analysis of data. The researcher recorded responses to

each question on the Follow-Up Telephone Interview Form. (See Appendix G, p. 224.)

Analysis of Data

The quantitative data obtained from the questionnaire were analyzed at the computer laboratory of the University of the Pacific utilizing the SPSS computer programs on the VAX 11/785 computer system. The data for each respondent were stored on disk. Qualitative data from open-response items thirteen, twenty-three and sections V, VI, VII, and VIII of the questionnaire were hand tabulated.

Both descriptive and inferential statistics were utilized to analyze the quantitative data. Means, frequency distributions, and percentage distributions provided descriptive information for academic content area teachers in relationship to each questionnaire item. This descriptive data served to address the eight analysis questions of the problem:

1. Which specific reading study skills do content area teachers perceive to be important to student success in the subject area in which they teach?

2. What are the perceptions of content area teachers regarding the current level of abilities of students to perform reading study skills?

3. To what extent do content area teachers allocate time to the instruction of reading study skills?

4. What instructional procedures do teachers utilize in study skills instruction?

5. To what extent are teachers confident of their ability to teach the reading study skills that students need?

6. To what extent is course content conveyed by means of: textbook, supplementary written materials, and discussion/ lecture/oral explanation?

7. What practical factors encourage and/or inhibit the efforts of teachers to teach reading study skills?

8. What assistance or instructional provisions would enhance the efforts of teachers to teach reading study skills?

For the eleven related hypotheses, inferential statistical procedures were used to analyze differences among sub-groups according to teacher variables for each questionnaire item and to analyze differences between item frequency distribution patterns of each sub-group. The inferential statistics procedures of analysis of variance, Pearson correlation, and *Chi* square test of association were utilized.

Specifically, through one-way analysis of variance (ANOVA), the following four null hypotheses involving comparisons by teacher variable were tested:

H_1 The perceived importance of reading study skills for student success (**Importance**) does not differ relative to the following teacher variables:

   $H_{1.1}$ subject area taught.

   $H_{1.2}$ ability level taught.

   $H_{1.3}$ grade level taught.

   $H_{1.4}$ gender.

   $H_{1.5}$ years of teaching experience.

   $H_{1.6}$ number of college/university courses in Reading.

   $H_{1.7}$ level of educational preparation.

H_2 The perceived current level of abilities of students to perform reading study skills (**Ability**) does not differ relative to the following teacher variables:

   $H_{2.1}$ subject area taught.

   $H_{2.2}$ ability level taught.

   $H_{2.3}$ grade level taught.

   $H_{2.4}$ gender.

   $H_{2.5}$ years of teaching experience.

   $H_{2.6}$ number of college/university courses in Reading.

   $H_{2.7}$ level of educational preparation.

H_3 The extent to which content area teachers allocate time to the instruction of reading study skills (**Instructional Time**) does not differ relative to the following teacher variables:

   $H_{3.1}$ subject area taught.

   $H_{3.2}$ ability level taught.

$H_{3.3}$ grade level taught.

$H_{3.4}$ gender.

$H_{3.5}$ years of teaching experience.

$H_{3.6}$ number of college/university courses in Reading.

$H_{3.7}$ level of educational preparation.

H_4 The extent to which course content is conveyed by the instructional mediums of textbook, supplementary written materials, and discussion/lecture/oral explanation (**Mediums of Instruction**) does not differ relative to the following variables:

$H_{4.1}$ subject area taught.

$H_{4.2}$ ability level taught.

$H_{4.3}$ grade level taught.

$H_{4.4}$ gender.

$H_{4.5}$ years of teaching experience.

$H_{4.6}$ number of college/university courses in Reading.

$H_{4.7}$ level of educational preparation.

H_5 The extent to which teachers are confident of their ability to teach reading study skills (**Confidence**) does not differ relative to the following teacher variables:

$H_{5.1}$ subject area taught.

$H_{5.2}$ ability level taught.

$H_{5.3}$ grade level taught.

$H_{5.4}$ gender.

$H_{5.5}$ years of teaching experience.

$H_{5.6}$ number of college/university courses in Reading.

$H_{5.7}$ level of educational preparation.

The *Chi* -square test of association was used with Hypothesis 6 to determine if teacher variables are related to use of instructional procedures by testing the hypothesis:

H_6 The instructional procedures utilized in study skills instruction are not related to the following teacher variables:

$H_{6.1}$ subject area taught.

$H_{6.2}$ ability level taught.

$H_{6.3}$ grade level taught.

$H_{6.4}$ gender.

$H_{6.5}$ years of teaching experience.

$H_{6.6}$ number of college/university courses in Reading.

$H_{6.7}$ level of educational preparation.

Relationships among the following variables were examined utilizing t-tests of the Pearson correlation coefficient: perceived importance of reading study skills (**Importance**), perceived abilities of students to perform reading study skills (**Ability**), extent of instructional time allocated to teaching reading study skills (**Instructional Time**), and mediums of instruction of course content (**Mediums of Instruction**). For possible relationships among the variables of **Importance**, **Ability**, and **Instructional Time**, the null hypotheses were:

H_7 The perceived importance of study skills to student success (**Importance**) is not correlated with the perceived abilities of students to perform study skills (**Ability**).

H_8 The perceived importance of study skills to student success (**Importance**) is not correlated with the extent of instructional time allocated to teaching study skills (**Instructional Time**).

H_9 The perceived ability level of students to perform study skills (**Ability**) is not correlated with the extent of instructional time allocated to teaching study skills (**Instructional Time**).

To address possible relationships among **Mediums of Instruction** and the three dimensions of **Importance, Ability,** and **Instructional Time,** the null hypothesis was:

H_{10} The mediums of instruction of course content (**Mediums of Instruction**) are not related to perceived importance of study skills (**Importance**), to perceived ability level of students to perform reading study skills (**Ability**), or to allocation of instructional time (**Instructional Time**).

For a possible relationship between teacher confidence (**Confidence**) and allocation of instructional time (**Instructional Time**), the null hypothesis was:

H_{11} The extent to which teachers are confident of their ability to teach reading study skills (**Confidence**) is not correlated with the extent of instructional time allocated to teaching reading study skills (**Instructional Time**).

For the inferential statistical procedures of ANOVA, Pearson correlation, and *Chi* -square test of association, the level of significance for determining the rejection of the null hypothesis was set at .01. Since a large number of hypotheses were tested, this level of significance was selected in order to guard against the probability of Type I errors.

Qualitative data obtained from the follow-up telephone interviews were hand-recorded, analyzed, and summarized by the researcher. (See Appendix H, p. 227.)

Summary

The survey instrument for this study, a questionnaire, was devised from the review of literature and was revised on the basis of pilot test results and suggestions made by university advisors. Four forms of the questionnaire, one for each of the target content areas, were devised and served to collect demographic information on respondents as well as to collect quantitative and qualitative data relative to the eight analysis questions and eleven hypotheses of the study.

Two mailings were conducted. The first mailing consisted of packets of questionnaires and cover letters to four teachers, one from each of the four content areas. These were sent to principals of 172 secondary schools with the request that they give the cover letters and questionnaires to teachers. Two different types of

packets were sent for the second mailing. For non-responding schools, a packet similar to the first one was sent to principals with a special hand-written request that they participate in the study by distributing the cover letters and questionnaires to teachers. For partially-responding schools, a packet was sent with a cover letter to principals thanking them for distributing the materials and with additional materials for the content areas that were not represented in the first mailing. Principals were advised which content areas had not responded and were asked to redistribute the materials to the same or another teacher in each non-responding content area.

The total number of respondents for both mailings was 374 or 54.4 percent. Total responses by content area were: English, 92 (53.5 percent); mathematics, 94 (54.7 percent); science, 103 (59.9 percent); and, social science, 85 (49.4 percent).

Additional data were obtained through telephone interviews that were conducted with twenty respondents who agreed to participate in a follow-up interview. Interviewees were asked questions to elicit additional insight into preliminary findings of the data obtained by the questionnaire.

Both descriptive and inferential statistics were utilized to analyze the quantitative data. Means, frequency distributions, and percentage distributions provided descriptive information for academic content area teachers in relationship to each questionnaire item and served to address the eight analysis

questions. Inferential statistical procedures were used to analyze differences among sub-groups according to teacher variables for each questionnaire item and to analyze differences between item frequency distribution patterns of each sub-group. The inferential statistics procedures of analysis of variance, t-tests of the Pearson correlation, and *Chi* -square test of association were utilized and served to address the eleven hypotheses. Qualitative data from open-response items on the questionnaire were hand tabulated and data obtained from the follow-up telephone interviews were hand-recorded, analyzed, and summarized by the researcher.

The next chapter presents a discussion of the data from the questionnaire in relationship to each of the analysis questions and to the proposed hypotheses of the study. It also provides an analysis of data from the follow-up telephone interviews.

Chapter 4

FINDINGS

This investigation sought data relevant to the problem: To
what extent are academic content area teachers in California
secondary schools providing instruction in reading study skills as
part of their instructional program?   Data were gathered to
address the eight analysis questions and eleven hypotheses of the
study.   In addition, information was obtained from follow-up
telephone interviews in order to provide greater insight into
teacher perceptions and practices.   Accordingly, the plan of this
chapter is to summarize findings as revealed by the data in
reference to the analysis questions and the proposed hypotheses,
and to summarize the responses of interviewees.

The Analysis Questions

Each analysis question is restated in this section.   For each
question, the findings of the data are reported and discussed.

For Analysis Questions 1, 2, and 3, data were gathered by
requiring teachers to respond to each of the twelve reading skills

purposes of discussing the data, there, interpretation of the scale was utilized: 1-1.49, very low value; 1.50-2.49, low value; 2.50-3.49, moderate value; 3.50-4.49, high value; 4.50-5, very high value. Discussion of the findings of the data related to Analysis Questions 1, 2, and 3 are in terms of the mean score obtained for each skill. (For Analysis Questions 1, 2 and 3, frequency tables by content area are located in the following appendices: English, Appendix I, p. 268; mathematics, Appendix J, p. 273; science, Appendix K, p. 278; social science, Appendix L, p. 283.)

Question 1

Which specific reading study skills do content area teachers perceive to be important to student success in the subject area in which they teach? Data were obtained for this question by requesting respondents to indicate the importance of each reading study skill. The key on the questionnaire consisted of the statement, "Use of this skill would improve students' performance in my class." Teachers indicated their perceptions of the importance of each skill on a scale of "1" to "5," where "1" meant "Very Little" and "5" meant "Very Much."

Teachers of English indicated they assign a very high value of importance to "Identifying main ideas," with a mean of 4.73.

English teachers assign a high value of importance to "Summarizing" (4.36), "Posing questions from text" (4.12), "Paraphrasing" (4.11), "Predicting Content" (3.90), "Notetaking from text" (3.75), and "Using textbook organizational devices" (3.73). They accord moderate value to all other reading study skills: "Surveying a textbook chapter" (3.48), "Outlining" (3.48), "Using a textbook reading/study strategy" (3.21), "Constructing diagrammatic representations of text" (3.08), and "Reciting material" (2.88).

Teachers of mathematics assign a high value of importance to "Identifying main ideas" (4.22), "Summarizing" (4.01), "Posing questions from text" (3.82), "Using textbook organizational devices" (3.66) and "Paraphrasing" (3.52). Mathematics teachers accord moderate value to all other reading study skills: "Constructing diagrammatic representations of text" (3.19), "Reciting material" (3.19), "Surveying a textbook chapter" (3.05), "Predicting content" (3.05), ""Notetaking from text" (3.04), "Using a textbook reading/study strategy" (2.84), and "Outlining" (2.79).

Science teachers indicated they assign a very high value of importance to "Identifying main ideas" (4.72). They perceive six other reading study skills to have high value: "Using textbook organizational devices" (4.27), "Summarizing" (4.15), "Surveying a textbook chapter" (4.09), "Posing questions from text" (4.01), "Predicting content" (3.58), and "Paraphrasing" (3.58). Teachers of science attach a moderate value of importance to "Using a textbook

reading/study strategy" (3.48), "Notetaking from text" (3.46), "Constructing diagrammatic representations of text" (3.30), "Outlining" (3.24), and "Reciting material" (2.90).

In the content area of social science, teachers accord a very high value of importance to "Identifying main ideas" (4.81). They indicated that they assign a high value of importance to "Summarizing" (4.21), "Surveying a textbook chapter" (4.10), "Posing questions from text" (4.10), "Predicting content" (3.81), and "Paraphrasing" (3.72). Social science teachers perceive a moderate value of importance for "Outlining" (3.49), "Notetaking from text" (3.43), "Using a textbook reading/study strategy" (3.37), "Constructing diagrammatic representations of text" (3.27), and "Reciting material" (2.59).

Across all subject areas, respondents indicated they assign considerable importance to seven of the twelve reading study skills listed. Teachers perceive the skill of "Identifying main ideas" to have very high importance with an overall mean of 4.62. The skills of "Summarizing" (4.18), "Posing questions from text" (4.01), "Using textbook organizational devices" (3.97), "Paraphrasing" (3.73), "Surveying a textbook chapter" (3.68), and "Predicting Content" (3.58) were rated as having high importance. Respondents rated the remainder of the skills as being of moderate importance: "Notetaking from text" (3.42), "Outlining" (3.24), "Constructing diagrammatic representations of text" (3.24), "Using a textbook reading/study strategy" (3.23), and "Reciting material"

(2.90). No reading study skill was rated as having a low or very low value of importance. Data for respondents of all four content areas for Analysis Question 1 are summarized in Table 1.

Question 2

What are the perceptions of content area teachers regarding the current level of abilities of students to perform reading study skills? Data were obtained for this question by requesting respondents to indicate how well students can perform each reading study skill. The key on the questionnaire consisted of the statement, "Students demonstrate the ability to perform this skill." Teachers indicated their perceptions on a scale of "1" to "5," where "1" meant "Very Little" and "5" meant "Very Much;" in addition, a "?" was provided and respondents were asked to circle it if they were uncertain regarding the ability of students of perform a particular skill.

Respondents from the content area of English indicated that they perceive a high ability level of students to perform the reading study skill, "Identifying main ideas" (3.67). English teachers perceive the ability level of students to perform all other reading study skills as moderate: "Summarizing" (3.52), "Posing questions from text" (3.32), "Using textbook organizational devices" (3.27), "Predicting Content" (3.14), "Paraphrasing" (3.08), "Surveying a textbook chapter" (3.01), "Reciting material" (2.90),

Table 1

IMPORTANCE OF READING STUDY SKILLS AS PERCEIVED BY TEACHERS OF
FOUR CONTENT AREAS

Analysis Question 1

| | Means | | | | |
Skill	English	Mathematics	Science	Social Science	Grand Mean
Surveying a textbook chapter	3.48	3.05	4.09	4.10	3.68
Predicting content	3.90	3.05	3.58	3.81	3.58
Identifying main ideas	4.73	4.22	4.72	4.81	4.62
Using textbook organizational devices	3.73	3.66	4.27	4.20	3.97
Posing questions from text	4.12	3.82	4.01	4.10	4.01
Notetaking from text	3.75	3.04	3.46	3.43	3.42
Paraphrasing	4.11	3.52	3.58	3.72	3.73
Summarizing	4.36	4.01	4.15	4.21	4.18
Outlining	3.48	2.79	3.24	3.49	3.24
Constructing diagrammatic representations of text	3.08	3.31	3.30	3.27	3.24
Reciting material	2.88	3.19	2.90	2.59	2.90
Using a textbook reading/ study strategy	3.21	2.84	3.48	3.37	3.23

"Outlining" (2.85), "Using a textbook reading/study strategy" (2.83), and "Constructing diagrammatic representations of text" (2.56).

Teachers of mathematics do not perceive students as having a very high ability level or a high ability level for any of the twelve reading study skills. They indicated that students have a moderate ability level to perform seven of the skills: "Identifying main ideas" (3.27), "Using textbook organizational devices" (3.18), "Reciting material" (3.14), "Posing questions from text" (3.04), "Summarizing" (2.99), "Paraphrasing" (2.70), and "Constructing diagrammatic representations of text" (2.55). Mathematics teachers rated students as having a low ability level to perform the skills of "Surveying a textbook chapter" (2.49), "Predicting Content" (2.39), "Notetaking from text" (2.37), "Using a textbook reading/study strategy" (2.37), and "Outlining" (2.29).

Science teachers perceive a high ability level of students to perform "Identifying main ideas" (3.52). They perceive a moderate ability level of students to perform all other reading study skills: "Using textbook organizational devices" (3.43), "Surveying a textbook chapter" (3.22), "Posing questions from text" (3.18), "Summarizing" (3.09), "Reciting material" (3.07), "Notetaking from text" (2.81), "Using a textbook reading/study strategy" (2.74), "Outlining" (2.72), "Predicting Content" (2.67), "Paraphrasing" (2.63), and "Constructing diagrammatic representations of text" (2.55).

In the content area of social science, respondents indicated that they perceive a high ability level of students to perform "Identifying main ideas" (3.81) and "Using textbook organizational devices" (3.63). Social science teachers perceive a moderate ability level of students to perform all other skills: "Summarizing" (3.44), "Surveying a textbook chapter" (3.41), "Posing questions from text" (3.41), "Reciting material" (3.25), "Notetaking from text" (3.18), "Using a textbook reading/study strategy" (3.14), "Paraphrasing" (3.11), "Predicting Content" (3.06), "Outlining" (3.00), and "Constructing diagrammatic representations of text" (2.72).

Total responses across all subject areas indicate that teachers perceive a high ability level among students to perform one reading study skill, "Identifying main ideas" (3.56). They perceive a moderate ability level among students to perform all other reading study skills: "Using textbook organizational devices" (3.37), "Summarizing" (3.25), "Posing questions from text" (3.23), "Reciting material" (3.09), "Surveying a textbook chapter" (3.04), "Paraphrasing" (2.87), "Notetaking from text" (2.82), "Predicting Content" (2.81), "Using a textbook reading/study strategy" (2.79), "Outlining" (2.73), and "Constructing diagrammatic representations of text" (2.59). Teachers do not perceive a low ability level or very low ability level of students to perform any of the twelve reading study skills listed on the questionnaire. Data for respondents of

all four content areas for Analysis Question 2 are summarized in Table 2.

Question 3

To what extent do content area teachers allocate time to the instruction of reading study skills? Data were obtained for this question by requesting respondents to indicate the extent to which they spend time teaching each reading study skill. The key on the questionnaire consisted of the statement, "I spend time teaching this skill." Teachers indicated the extent to which they teach each skill on a scale of "1" to "5," where "1" meant "Very Little" and "5" meant "Very Much."

Teachers of English report that they allocate a high level of instructional time for teaching "Identifying main ideas" (4.15), "Summarizing" (3.82), "Posing questions from text" (3.66), and "Paraphrasing" (3.54). English teachers allocate a moderate level of instructional time for teaching "Predicting Content" (3.28), "Notetaking from text" (2.99), "Using textbook organizational devices" (2.89), and "Outlining" (2.81). They allocate a low level of instructional time for "Constructing diagrammatic representations of text" (2.49), "Using a textbook reading/study strategy" (2.44), "Reciting material" (2.42), and "Surveying a textbook chapter" (2.34).

Respondents from the content area of mathematics indicated that they allocate a high level of instructional time for teaching

Table 2

ABILITY LEVEL OF STUDENTS TO PERFORM READING STUDY SKILLS
AS PERCEIVED BY TEACHERS OF FOUR CONTENT AREAS

Analysis Question 2

	Means				
Skill	English	Mathematics	Science	Social Science	Grand Mean
Surveying a textbook chapter	3.01	2.49	3.22	3.41	3.04
Predicting content	3.14	2.39	2.67	3.06	2.81
Identifying main ideas	3.67	3.27	3.52	3.81	3.56
Using textbook organizational devices	3.27	3.18	3.43	3.63	3.37
Posing questions from text	3.32	3.04	3.18	3.41	3.23
Notetaking from text	2.88	2.37	2.81	3.18	2.82
Paraphrasing	3.08	2.70	2.63	3.11	2.87
Summarizing	3.52	2.99	3.09	3.44	3.25
Outlining	2.85	2.29	2.72	3.00	2.73
Constructing diagrammatic representations of text	2.56	2.55	2.55	2.72	2.59
Reciting material	2.90	3.14	3.07	3.25	3.09
Using a textbook reading/ study strategy	2.83	2.37	2.74	3.14	2.79

two skills: "Identifying main ideas" (3.82) and "Summarizing" (3.66). They allocate a moderate level of instructional time for teaching the skills of "Posing questions from text" (3.39), "Paraphrasing" (3.28), "Using textbook organizational devices" (3.19), "Reciting material" (2.96), and "Constructing diagrammatic representations of text" (2.72). For five skills, mathematics teachers report they allocate a low level of instructional time: "Predicting Content" (2.49), "Notetaking from text" (2.35), "Using a textbook reading/study strategy" (2.12), "Surveying a textbook chapter" (2.09), and "Outlining" (2.00).

Science teachers reported that they allocate a high level of instructional time for teaching "Identifying main ideas" (3.88). Their responses indicated that they spend a moderate level of instructional time teaching "Summarizing" (3.48), "Using textbook organizational devices" (3.37), "Posing questions from text" (3.30), "Paraphrasing" (2.84), "Surveying a textbook chapter" (2.76), "Constructing diagrammatic representations of text" (2.74), "Predicting Content" (2.72), "Using a textbook reading/study strategy" (2.64), and "Notetaking from text" (2.60). Science teachers allocate a low level of instructional time for teaching "Outlining" (2.49) and "Reciting material" (2.47).

Social science teachers report that they allocate a high level of instructional time for teaching the skills, "Identifying main ideas" (4.17), "Summarizing" (3.75), "Posing questions from text" (3.59), and "Using textbook organizational devices" (3.53). They

spend a moderate level of instructional time teaching "Paraphrasing" (3.22), "Predicting Content" (3.13), "Surveying a textbook chapter" (3.06), "Notetaking from text" (2.99), "Outlining" (2.92), "Using a textbook reading/study strategy" (2.85), and "Constructing diagrammatic representations of text" (2.79). Social science teachers report spending a low level of instructional time to teach "Reciting material" (2.47).

Total responses across all four content areas reveal that teachers reported they allocate a high level of instructional time for teaching two skills: "Identifying main ideas" (4.00) and "Summarizing" (3.67). Teachers allocate a moderate level of instructional time for teaching all other study skills: "Posing questions from text" (3.48), "Using textbook organizational devices" (3.24), "Paraphrasing" (3.21), "Predicting Content" (2.89), "Notetaking from text" (2.72), "Constructing diagrammatic representations of text" (2.69), "Reciting material" (2.58), "Surveying a textbook chapter" (2.56), "Outlining" (2.54), and "Using a textbook reading/study strategy" (2.51). Overall, teachers did not report spending a very high, a low, or a very low level of instructional time for teaching any of the twelve reading study skills. Data for respondents of all four content areas for Analysis Question 3 are summarized in Table 3.

At the end of the listing of the twelve reading study skills on the questionnaire, teachers could add any other reading study skill they teach by writing it in a blank space. A total of 90 respondents

Table 3

ALLOCATION OF INSTRUCTIONAL TIME FOR READING STUDY SKILLS
AS REPORTED BY TEACHERS OF FOUR CONTENT AREAS

Analysis Question 3

| | Means | | | | |
Skill	English	Mathematics	Science	Social Science	Grand Mean
Surveying a textbook chapter	2.34	2.09	2.76	3.06	2.56
Predicting content	3.28	2.49	2.72	3.13	2.89
Identifying main ideas	4.15	3.82	3.88	4.17	4.00
Using textbook organizational devices	2.89	3.19	3.37	3.53	3.24
Posing questions from text	3.66	3.39	3.30	3.59	3.48
Notetaking from text	2.99	2.35	2.60	2.99	2.72
Paraphrasing	3.54	3.28	2.84	3.22	3.21
Summarizing	3.82	3.66	3.48	3.75	3.67
Outlining	2.81	2.00	2.49	2.92	2.54
Constructing diagrammatic representations of text	2.49	2.72	2.74	2.79	2.69
Reciting material	2.42	2.96	2.47	2.47	2.58
Using a textbook reading/ study strategy	2.44	2.12	2.64	2.85	2.51

(24.1 percent) wrote-in another skill or other skills that they teach for a total of 95 additional skills. Of the 95 additional skills provided, only 28 (7.5 percent) were in actuality study skills, either reading study skills or general study skills. The most commonly-cited study skill teachers wrote-in was "mnemonics," or utilizing memory "tricks" to recall information. Most of the other 67 skills were classified into four other instructional categories: general teaching methods (16 or 4.3 percent); vocabulary development strategies (6 or 1.6 percent), study habits (7 or 1.9 percent), and comprehension/ thinking skills (30 or 8.0 percent). The high proportion of responses of the total number of respondents who filled-in this item (74.4 percent) that did not identify a reading study skill seems to indicate a lack of understanding of the term "study skill" and/or "reading study skill." This observation is discussed further in Chapter 5.

Question 4

What instructional procedures do teachers utilize in reading study skills instruction? Data were obtained for this question by asking teachers to respond to the item, "When teaching a study skill, I typically use the following methods (check all that apply)." Following the item, the nine instructional procedures most frequently recommended for reading study skills instruction were listed. In addition to specific procedures, teachers could add any

other procedure they use by writing it in a blank space. Data for Question 4 are summarized in Table 4.

Overall, high proportions characterize the data from all content areas for all instructional procedures. The single procedure that the greatest proportion of teachers in each content area utilizes is "Demonstration/ Modeling of skill." By content area, the proportions are: English, 95.6 percent; mathematics, 92.5 percent; science, 94.1 percent; and, social science, 85.7 percent. In addition, an equal proportion of social science teachers, 85.7 percent, utilize "Explanation of benefits of using the skills."

The smallest proportion of teachers in each of the content areas of English, mathematics, and science utilize guided practice procedures. For "Guided practice/ application, individual basis," the proportions are: English, 75.8 percent; mathematics, 78.5 percent; and, science, 61.8 percent. For "Guided practice/application, students groups," the proportions are: English, 74.7 percent; mathematics, 73.1 percent; and, science, 70.6 percent. Among social science teachers, the smallest proportion (60.7 percent) utilizes one of the guided practice procedures, "Guided practice/application, individual basis."

As Table 4 shows, all other procedures are utilized by varying, but sizable, proportions of teachers of all four content areas. The range of proportions among English teachers for all skills is 95.6 percent to 74.7 percent; among mathematics teachers, 92.5 percent to 73.1 percent; among science teachers,

Table 4

INSTRUCTIONAL PROCEDURES UTILIZED IN READING STUDY SKILLS INSTRUCTION

Analysis Question 4

| Procedure | Frequency and Percentage of Total | | | | |
	English	Mathematics	Science	Social Science	Total
Description of skill	84	83	82	71	320
	92.3	89.3	80.4	84.5	85.6
Demonstration/Modeling of skill	87	86	96	72	341
	95.6	92.5	94.1	85.7	91.2
Guided practice/application, individual basis	69	73	63	51	256
	75.8	78.5	61.8	60.7	68.4
Guided practice/application, student groups	68	68	72	60	268
	74.7	73.1	70.6	71.4	71.7
Feedback to students on practice attempts	80	80	79	64	303
	87.9	86.0	77.5	76.2	81.0
Explanation of benefits of using the skill	87	78	85	72	292
	95.6	83.9	83.3	85.7	78.1
Encouragement to use the skill independently	76	82	73	61	284
	83.5	88.2	71.6	72.6	75.9
Reinforcement of instruction as needed	77	76	74	57	305
	84.6	81.7	72.6	67.9	81.6

94.1 percent to 61.8 percent; and, among social science teachers, 85.7 percent to 60.7 percent.

A total of thirty-three respondents (9.7 percent) wrote-in an additional procedure that they utilize. Most of these responses were idiosyncratic, being given only once. Only three categories of these additional responses were discerned: "Application to 'student reality,'" four responses for 1.2 percent; "Constant practice/stress on skills," three responses for 0.8 percent; and, "Evaluation to determine need for reteaching," 2 responses for 0.5 percent.

Question 5

To what extent are teachers confident of their ability to teach the reading study skills that students need? Teachers responded to a Likert-type item consisting of the statement, "I am confident of my ability to teach the reading study skills that students need." Respondents selected from five possible choices: "Strongly Disagree," "Disagree," "Undecided," "Agree," and "Strongly Agree." For purposes of analyzing the responses, each choice was assigned a value from "1" to "5" for the following response values:

Response	Value
Strongly Disagree	1
Disagree	2
Undecided	3
Agree	4
Strongly Agree	5

Data for Question 5, including frequencies of responses for all content areas, are displayed in Table 5.

A large proportion of English teachers (79.2 percent) indicated they agree (49.5 percent) or strongly agree (29.7) with the statement. A small proportion (9.9 percent) indicated they disagree (6.6 percent) or strongly disagree (3.3 percent) with the statement. Among English teachers responding, a small proportion (11.0 percent) indicated they are undecided regarding their confidence level. The mean value of responses from English teachers (3.96) indicates that overall, they express agreement with the statement.

A majority of mathematics teachers (59.8 percent) responded that they agree (45.7 percent) or strongly agree (14.1 percent) with the statement. Among respondents from mathematics, a small proportion (18.5 percent) indicated they disagree (15.2 percent) or strongly disagree (3.3 percent). Responses revealed a somewhat larger proportion (21.7 percent) of mathematics teachers are undecided regarding their confidence level. The mean response for mathematics teachers (3.52) indicates that they tend to be in general agreement with the statement.

A majority of science teachers (56.3 percent) indicated that they agree (43.7 percent) or strongly agree (12.6 percent) with the statement. A small proportion of science teachers (18.5 percent) recorded that they disagree (17.5 percent) or strongly disagree (1.0 percent). However, slightly more than one-fourth of respondents

from science (25.2 percent) indicated they are undecided regarding their confidence level. Science teachers reported the lowest mean response (3.50); they tend to be undecided to being in general agreement with the statement.

A sizable proportion of social science teachers (63.0 percent) responded that they agree (45.7 percent) or strongly agree (17.3 percent) with the statement. Among respondents for social science, a small proportion (19.7 percent) indicated they disagree (16.0 percent) or strongly disagree (2.7 percent). Responses revealed that a somewhat smaller proportion (17.3) are undecided regarding their confidence level. For social science teachers, the mean response (3.57) indicates that they tend to agree with the statement.

Across all four content areas, a majority of respondents (63.1 percent) recorded that they agree (45.2 percent) or strongly agree (17.9 percent) with the statement, indicating that most respondents are confident of their ability to teach reading study skills. Only a small proportion of respondents (16.3 percent) indicated they disagree (13.6 percent) or strongly disagree (2.7 percent) with the statement. A slightly greater proportion (18.7 percent) of respondents indicated they are uncertain of their ability to teach reading study skills. The grand mean for all respondents (3.62) indicates that content area teachers are in general agreement with the statement. Data from all four content areas for Analysis Question 5 are presented in Table 5.

Table 5

TEACHER CONFIDENCE

Analysis Question 5

Item: "I am confident of my ability to teach the reading study skills that students need."

| Content Area | Frequency and Percentage of Total | | | | | | | |
	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree	Total	No Response	Mean
ENGLISH	3	6	10	45	27	91	1	3.96
	3.3	6.6	11.0	49.5	29.7	98.9	1.1	
MATHEMATICS	3	14	20	42	13	92	2	3.52
	3.3	15.2	21.7	45.7	14.1	97.9	2.1	
SCIENCE	1	18	26	45	13	103	0	3.50
	1.0	17.5	25.2	43.7	12.6	100.0	0.0	
SOCIAL SCIENCE	3	13	14	37	14	81	4	3.57
	3.7	16.0	17.3	45.7	17.3	95.3	4.7	
TOTALS	10	51	70	169	67	367	7	3.62
	2.7	13.6	18.7	45.2	17.9	98.1	1.9	

Question 6

To what extent is course content conveyed by means of: textbook, supplementary written materials, and discussion/lecture/oral explanation? Teachers were asked to indicate the percentage of course content that they convey through both print and non-print mediums of instruction. Three choices were provided: "Textbook," "Supplementary written materials," and "Discussion/Lecture/ Oral explanation." Respondents indicated one of five possible percentage ranges for each medium of instruction. For purposes of analyzing the responses, each percentage range was assigned a value from "1" to "5." The percentage ranges and the data value of each are:

Range	Value
0-19%	1
20-39%	2
40-59%	3
60-79%	4
80-100%	5

Data for Question 6 for all content areas are summarized in Table 6; mean values represent the percentage ranges as listed above. The mean values serve to reveal patterns of instructional practice among teachers in terms of utilizing the three mediums of instruction. (Frequency tables by content area are in Appendices I, J, K, and L.)

Table 6

MEDIUMS OF INSTRUCTION OF COURSE CONTENT FOR FOUR CONTENT AREAS

Analysis Question 6

Medium of Instruction	Means				Grand Mean
	English	Mathematics	Science	Social Science	
TEXTBOOK	2.10	2.67	2.25	2.68	2.41
SUPPLEMENTARY WRITTEN MATERIALS	2.32	1.51	1.88	1.63	1.84
DISCUSSION/LECTURE/ ORAL EXPLANATION	2.57	2.97	2.74	2.52	2.71

English teachers utilize "Discussion/Lecture/Oral explanation" as a medium of instruction for the highest proportion of course content. The second most-utilized medium of instruction by English teachers is "Supplementary written materials." They utilize "Textbook" for the lowest proportion of course content.

For the content areas of mathematics and science, the same pattern exists among the three mediums of instruction. The single medium utilized by mathematics and science teachers for the highest proportion of course content is "Discussion/ Lecture/Oral explanation." The second most-utilized medium of instruction is "Textbook," with the least utilized medium of instruction being "Supplementary written materials."

Among respondents from social science, the single medium utilized for the highest proportion of course content is "Textbook." The second most-utilized medium of instruction is "Discussion/Lecture/Oral explanation," with the least utilized medium of instruction being "Supplementary written materials."

Across the four content areas, "Supplementary written materials" is utilized for the least proportion of course content in mathematics, science, and social science. Only English teachers use "Textbook" to a lesser extent than "Supplementary written materials," and only social science teachers use "Textbook" to a greater extent than "Discussion/Lecture/Oral explanation."

Question 7

What practical factors encourage and/or inhibit the efforts of teachers to teach reading study skills? Teachers were asked to respond to the open-response item, "What practical factors *encourage* or *inhibit* your teaching reading study skills?" All responses were hand tabulated. For "encouraging factors," only non-unique responses, i.e., responses that were given a minimum of two times, were considered to be important data. (See Table 7.) For "inhibiting factors," only those responses that comprised at least one percent of the total number of respondents were considered to be important data. (See Table 8.)

A total of 72 respondents (19.3 percent) across all content areas identified "encouraging factors." The most frequently cited

encouraging factor mentioned was "Needs of students," for a total of twelve responses or 3.2 percent of all respondents. The next most frequently cited encouraging factor was about available materials, either that they were interesting, of high quality, and/or were appropriate for students. These responses were grouped under the category, "Interesting/High quality/Appropriate materials," with a total of eleven responses or 2.9 percent of all respondents.

The remainder of categories of "encouraging factors," with frequencies, are: "School commitment/Staff and administrative support," eight responses for 2.1 percent; "Professional training/Inservice training," seven responses for 1.9 percent; "Personal value placed on reading/study techniques, six responses for 1.6 percent; "Importance of reading skills," five responses for 1.3 percent; "Positive results in student achievement," four responses for 1.1 percent; and, "Students who want to learn," two responses for 0.5 percent. These data are summarized in Table 7.

A much larger number of responses related to "inhibiting factors." A total of 261 respondents (69.8 percent) identified factors that inhibit their instruction of reading study skills. The most frequently cited inhibiting factor was, "Lack of time," with a total of 113 responses for 30.2 percent of all respondents. The next most frequently cited inhibiting factor was, "Lack of professional preparation/training," with a total of 40 responses

Table 7

FACTORS THAT ENCOURAGE INSTRUCTION OF READING STUDY SKILLS
AS REPORTED BY TEACHERS OF FOUR CONTENT AREAS

Analysis Question 7

Factor	Frequency	Percentage of Total
Needs of students	12	3.2
Interesting/High quality/Appropriate materials	11	2.9
School commitment/Staff and administrative support	8	2.1
Professional training/Inservice training	7	1.9
Personal value placed on reading/study techniques	6	1.6
Importance of reading skills	5	1.3
Positive results in student achievement	4	1.1
Students who want to learn	2	0.5

for 10.7 percent. A total of fourteen categories of inhibiting factors were identified and are summarized in Table 8.

Question 8

What assistance or instructional provisions would enhance the efforts of teachers to teach reading study skills? For this analysis question, teachers were asked to respond to the open-response item, "What assistance or instructional provision(s) would enhance

Table 8

FACTORS THAT INHIBIT INSTRUCTION AS REPORTED BY TEACHERS
OF FOUR CONTENT AREAS

Analysis Question 7

Factor	Frequency	Percentage of Total
Lack of time	113	30.2
Lack of professional preparation/training	40	10.7
Class size	35	9.4
Lack of adequate/appropriate/interesting materials	26	7.0
Wide range in the reading abilities of students	18	4.8
Student apathy/Lack of motivation/Poor student attitudes	17	4.6
Poor reading ability of students	13	3.5
Student discipline/behavior	7	1.9
Students already have the skills	7	1.9
Too many students with special learning needs	6	1.6
Not part of my job	6	1.6
Poor quality of texts	5	1.3
Student absenteeism	4	1.1
Class interruptions	4	1.1

instruction of reading study skills in your classroom?" The investigator hand-tabulated all responses and summarized the responses into thirteen categories. Only those responses that comprised at least one percent of the total number of respondents were considered to be important data. (See Table 9.)

A total of 260 teachers (69.5 percent) from all content areas wrote a response to this item. The most frequently cited category of provisions that would enhance teaching reading study skills is, "Inservice/Additional training/Reading methods course or seminar," with 63 responses for 16.9 percent of all respondents. The category, "More/Greater variety of instructional materials" had a slightly smaller proportion of responses with a total of 60 or 16.0 percent. The remainder of categories consisted of substantially fewer numbers; all thirteen categories are presented in Table 9.

Discussion in this section addressed the findings of the data relative to the eight analysis questions of this investigation. Inferences and conclusions for Analysis Questions 1 through 8 are discussed in Chapter 5. In the next section, findings of the data are discussed with reference to the eleven proposed hypotheses of the study.

Table 9

PROVISIONS THAT WOULD ENHANCE INSTRUCTION OF READING STUDY SKILLS
AS REPORTED BY TEACHERS OF FOUR CONTENT AREAS

Analysis Question 8

Provision	Frequency	Percentage of Total
Inservice/Additional training/Reading methods course or seminar	63	16.9
More/Greater variety of instructional materials	60	16.0
More time/Longer blocks of time	26	7.0
Smaller class size/Fewer students/More classes [of a given course]	26	7.0
Use of paraprofessionals	21	5.6
More/improved textbooks	18	4.8
Better preparation of students	14	3.7
School-wide emphasis/integration across the curriculum/administrative support	11	2.9
Peer support/Teaching assistance	8	2.1
Computers/Appropriate software	7	1.9
Less emphasis on content/change of curriculum priority	5	1.3
Instruction is not appropriate in my subject area	4	1.1
Identification of student learning needs	4	1.1

The Proposed Hypotheses

The survey instrument of this investigation, a questionnaire, generated descriptive data to address the eight analysis questions of the research problem. In addition, the questionnaire served to obtain data related to seven teacher variables: subject area taught, ability level taught, grade level taught, gender, years of teaching experience, number of college-university courses in Reading, and level of educational preparation. Utilizing the descriptive data that were generated, the investigator applied inferential procedures to explore further relationships among the data relative to eleven proposed hypotheses. In this section, each hypothesis is restated in its null form along with all sub-hypotheses. For each hypothesis, on the basis of results of appropriate inferential statistical procedures, each sub-hypothesis is accepted or rejected.

For H_1 **Importance**, H_2 **Ability**, H_3 **Instructional Time**, H_4 **Mediums of Instruction**, and H_5 **Confidence**, the inferential test of signficance, analysis of variance (ANOVA), was applied to the mean scores obtained for each teacher variable in order to discern significant differences among them. Tables summarizing the findings include only those teacher variables among which significant differences were found. (See Tables 10, 11, 12, 13, and 14.)

Hypothesis 1

The perceived importance of reading study skills for student success (**Importance**) *does not differ relative to the following teacher variables:* $H_{1.1}$ *subject area taught;* $H_{1.2}$ *ability level taught;* $H_{1.3}$ *grade level taught;* $H_{1.4}$ *gender;* $H_{1.5}$ *years of teaching experience;* $H_{1.6}$ *number of college/university courses in Reading;* $H_{1.7}$ *level of educational preparation.*

Significant differences in the mean scores for **Importance** vary by three teacher variables: *subject area taught, number of college/university courses in Reading,* and *gender.* As Table 10 illustrates, most differences are by content area, with differences among means for eight specific reading study skills varying by *subject area taught.* For three skills, "Surveying a textbook chapter," "Using textbook organizational devices," and "Using a textbook reading/study strategy," the mean scores of respondents from the content areas of science and social science are higher than the mean scores of respondents from the content areas of English or mathematics, indicating that science and social science teachers perceive a higher level of importance for these skills. For two skills, "Predicting content" and "Identifying main ideas," English, science, and social science teachers perceive a significantly higher level of importance than mathematics teachers. For the skill of "Outlining," respondents from English and

social science perceive a higher level of importance than respondents from mathematics or science.

Perceived importance for the skill, "Notetaking from text," varies by two teacher variables: *subject area taught* and *number of college/university courses in Reading*. English teachers perceive a higher level of importance for this skill than teachers of any other content area. Furthermore, respondents who have completed three or more courses in Reading perceive a higher level of importance for the skill than respondents who have completed no course in Reading.

Differences among means were noted for one other reading study skill. The perceived importance for "Paraphrasing" varies by two teacher variables: *subject area taught* and *gender*. English teachers perceive a higher level of importance for this skill than mathematics or science teachers, and female respondents perceive a higher level of importance for it than male respondents.

No differences among the means for any teacher variable were detected for the skills of "Posing questions from text," "Summarizing," "Constructing diagrammatic representations of text," and "Reciting material." Data for **Importance** are summarized in Table 10, which also presents the level of significance for each difference among means that was identified.

On the basis of the findings revealed through the statistical procedure of ANOVA, $H_{1.1}$ *subject area taught*, is rejected for the following specific reading study skills: "Surveying a textbook

Table 10

IMPORTANCE OF READING STUDY SKILLS

Analysis of Variance by Teacher Variable for Hypothesis 1

Dependent Variable: Reading Study Skill	Factor: Teacher Variable[1]	F	p	Multiple Comparisons
Surveying a textbook chapter	**Subject area**	17.27	<.0001	S, SS > E, M[2]
Predicting content	**Subject area**	10.13	<.0001	E, S, SS > M
Identifying main ideas	**Subject area**	11.33	<.0001	E, S, SS > M
Using textbook organizational devices	**Subject area**	7.74	<.0001	S, SS > E, M
Posing questions from text	_____	- - - -	- - - -	- - - -
Notetaking from text	**Subject area** **Courses in Reading**	4.99 3.90	<.001 <.01	E > M, S, SS 3, 3+ > 0[3]
Paraphrasing	**Subject area** **Gender**	5.00 12.33	<.01 <.001	E > M, S Female > Male
Summarizing	_____	- - - -	- - - -	- - - -
Outlining	**Subject area**	5.60	<.001	E, SS > M, S
Constructing diagrammatic representations of text	- - - - - - - -	- - - -	- - - -	- - - -
Reciting material	- - - - - - - -	- - - -	- - - -	- - - -
Using a textbook reading/study strategy	**Subject area**	4.09	<.01	S, SS > E, M

[1] For each skill, only those teacher variables with significant differences among groups are listed.

[2] For "Subject area," E = English; M = Mathematics; S = Science; SS = Social Science.

[3] For "Courses in Reading," 0 = No courses; 3 = Three courses; 3+ = More than three courses.

chapter," "Predicting content," "Identifying main ideas," "Using textbook organizational devices," "Notetaking from text," "Paraphrasing," "Outlining," and "Using a textbook reading/study strategy." For one skill, "Paraphrasing," $H_{1.4}$ *gender* is rejected and for one skill, "Notetaking from text," $H_{1.6}$ *number of university/college courses in Reading* is rejected.

Hypothesis 2

The perceived ability level of students to perform reading study skills (**Ability**) *does not differ relative to the following teacher variables:* $H_{2.1}$ *subject area taught;* $H_{2.2}$ *ability level taught;* $H_{2.3}$ *grade level taught;* $H_{2.4}$ *gender;* $H_{2.5}$ *years of teaching experience;* $H_{2.6}$ *number of college/ university courses in Reading;* $H_{2.7}$ *level of educational preparation.*

For the dimension of instruction, **Ability**, significant differences among means were detected for three teacher variables. By the teacher variable of *subject area taught*, significant differences among means for eight reading study skills were detected; by the teacher variable of *ability level taught*, significant differences among means for nine skills were detected; and, for the teacher variable of *grade level taught*, significant differences among means for three skills were detected.

By *ability level taught*, means differ for "Surveying a textbook chapter," "Predicting content," "Identifying main ideas," "Using

textbook organizational devices," "Posing questions from text," "Notetaking from text," "Paraphrasing," "Summarizing," and "Outlining." For each of these skills, mean scores of respondents who teach academic/college preparatory (AC) classes are higher than mean scores of respondents who teach general/regular (GEN) classes *and/or* respondents who teach basic/developmental/ remedial (BASIC) classes. This indicates that teachers of students enrolled in academic/college preparatory classes perceive a greater ability level among students to perform the skills than teachers of students enrolled in general/regular classes *and/or* teachers of students enrolled in basic/developmental/remedial classes. Table 11 provides further details regarding for which skills specific differences were detected between AC and GEN, AC and GEN and BASIC, and GEN and BASIC.

By *subject area taught*, differences among means differ signficantly for eight of the skills. For six skills, "Surveying a textbook chapter," "Identifying main ideas," "Notetaking from text," "Summarizing," "Outlining," and "Using a textbook reading/study strategy," respondents who teach English *and/or* science *and/or* social science perceive a greater level of ability of students to perform the skill than do mathematics teachers. In addition, English teachers perceive a greater ability level of students to perform "Summarizing" than mathematics or science teachers. For the skill, "Paraphrasing," respondents from English and social science perceive a greater ability level of students to perform the

skill than respondents from science. Respondents from English and social science also perceive a greater ability level among students to perform the skill, "Predicting content," than respondents from mathematics and science. Table 11 illustrates specific differences among respondents by subject area taught.

For differences among means by *grade level taught,* respondents who teach students in grades eleven and twelve perceive a greater ability level among students to perform "Summarizing" and "Outlining" than respondents who teach students in grades nine and ten. For "Using a textbook reading/study strategy," teachers of students in grades seven and eight and grades eleven and twelve perceive a greater ability of students to perform the skill than do teachers of students in grades nine and ten.

For **Ability**, no differences among means for any teacher variable were detected for the skills, "Constructing diagrammatic representations of text" and "Reciting material." Data are summarized in Table 11.

On the basis of the findings revealed through the statistical procedure of ANOVA, the sub-hypothesis $H_{2.1}$ *subject area taught* is rejected for the following specific reading study skills: "Surveying a textbook chapter," "Predicting content," "Identifying main ideas," "Notetaking from text," "Paraphrasing," "Summarizing,"

Table 11

PERCEIVED ABILITY LEVEL OF STUDENTS TO PERFORM READING STUDY SKILLS

Analysis of Variance by Teacher Variable for Hypothesis 2

Dependent Variable: Reading Study Skill	Factor: Teacher Variable[1]	F	p	Multiple Comparisons
Surveying a textbook chapter	Subject area	12.13	<.0001	E, S, SS > M[2]
	Ability level	15.24	<.0001	AC, GEN > BASIC[3]
Predicting content	Subject area	10.39	<.0001	E, SS > M, S
	Ability level	9.08	<.001	AC, GEN > BASIC
Identifying main ideas	Subject area	5.05	<.01	E, SS > M
	Ability level	9.92	<.001	AC > GEN > BASIC
Using textbook organizational devices	Ability level	7.60	<.001	AC, GEN >BASIC
Posing questions from text	Ability level	7.02	<.01	AC > BASIC
Notetaking from text	Subject area	7.97	<.0001	E, S, SS > M
	Ability level	9.77	<.001	AC > GEN > BASIC
Paraphrasing	Subject area	5.22	<.01	E, SS > S
	Ability level	5.44	<.01	AC > BASIC
Summarizing	Subject area	5.92	<.001	SS > M E > M, S
	Ability level	9.68	<.001	AC, GEN > BASIC
	Grade level	4.71	<.01	11-12 > 9-10
Outlining	Subject area	5.64	<.001	E, SS > M
	Ability level	8.08	<.001	AC > GEN, BASIC
	Grade level	5.09	<.01	11-12 > 9-10

Table 11 (continued)

Dependent Variable: Reading Study Skill	Factor: Teacher Variable[1]	F	p	Multiple Comparisons
Constructing diagrammatic representations of text	--------	----	----	----
Reciting material	-------	----	----	----
Using a textbook reading/study strategy	Subject area	5.34	<.01	SS > M
	Grade level	5.43	<.01	7-8, 11-12 > 9-10

[1] For each skill, only those teacher variables with significant differences among groups are listed.

[2] For "Subject area," E = English; M = Mathematics; S = Science; SS = Social Science.

[3] For "Ability level," AC = Academic/College Prepatory/Advanced; GEN = General/Regular; BASIC = Basic/ Developmental/Remedial.

"Outlining," and "Using a textbook reading/study strategy." The sub-hypothesis $H_{2.2}$ *ability level taught* is rejected for the skills "Surveying a textbook chapter," "Predicting content," "Identifying main ideas," "Using textbook organizational devices," "Posing questions from text," "Notetaking from text," "Paraphrasing," "Summarizing," and "Outlining." For three skills, "Summarizing," "Outlining," and "Using a textbook reading/study strategy, the sub-hypothesis 2.3 *grade level taught* is rejected.

Hypothesis 3

The extent to which content area teachers allocate time to the instruction of reading study skills (**Instructional Time**) *does not differ relative to the following teacher variables:* $H_{3.1}$ *subject area taught;* $H_{3.2}$ *ability level taught;* $H_{3.3}$ *grade level taught;* $H_{3.4}$ *gender;* $H_{3.5}$ *years of teaching experience;* $H_{3.6}$ *number of college/university courses in Reading;* $H_{3.7}$ *level of educational preparation.*

For **Instructional Time**, significant differences among means for certain reading study skills were detected for all seven teacher variables. Table 12 shows that differences among means were most commonly found for the teacher variable, *subject area taught*; differences were discovered for seven skills. For four skills, "Predicting content," "Notetaking from text," "Paraphrasing," and "Outlining," means for respondents from the content area of English are higher than means for respondents from the content areas of mathematics, *and/or* science, *and/or* social science, indicating that English teachers allocate more time for teaching those skills than mathematics teachers, *and/or* science teachers, *and/or* social science teachers. For five skills, "Surveying a textbook chapter," "Predicting content," "Notetaking from text," "Outlining," and "Using a textbook reading/study strategy," means for respondents from mathematics are lower than means for respondents from English, *and/or* science, *and/or* social science, indicating that mathematics teachers allocate less instructional

time for teaching those skills than do English teachers, *and/or* science teachers, *and/or* social science teachers. Table 12 provides additional details regarding for which skills specific differences were detected by *subject area taught*.

For the teacher variable of *number of college/university courses in Reading*, means differ significantly for three skills. For teaching the skill "Predicting content," respondents who completed more than three courses in Reading as part of their professional preparation allocate more instructional time than do respondents who completed no course or one course, and respondents who completed two courses in Reading allocate more instructional time than do respondents who completed one course. Respondents who completed three courses or more than three courses in Reading allocate more time for teaching "Identifying main ideas" than respondents who completed one course. The same pattern appears to exist for the skill "Notetaking from text." Respondents who completed two courses or three courses allocate more time for teaching the skill than respondents who completed no course or one course, and respondents who completed more than three courses allocate more time for teaching the skill than respondents who completed no course.

By *gender*, means differ for two skills, "Notetaking from text" and "Paraphrasing." For both skills, means for female respondents are higher than means for male respondents, indicating that female respondents allocate more time for teaching the skills than males.

For each of the teacher variables of *ability level taught*, *grade level taught*, *years of teaching experience*, and *level of educational preparation*, means differ for one skill. By *ability level taught*, differences among means were detected for "Surveying a textbook chapter;" teachers of students enrolled in general/regular classes allocate more instructional time for teaching the skill than teachers of students enrolled in academic/college preparatory classes. By *grade level taught*, more instructional time is allocated for teaching "Reciting material" by teachers of students in grade seven and eight than by teachers of students in grades eleven and twelve. By *years of teaching experience*, respondents who have taught more than twelve years allocate more time for teaching "Predicting content" than respondents who have taught seven, eight, or nine years. By *level of educational preparation*, respondents who hold a doctorate allocate less time for teaching "Posing questions from text" than respondents who hold a bachelors degree, a bachelors degree with additional coursework, a masters degree, or a masters degree with additional coursework. No differences among means for any teacher variable were detected for the skills of "Summarizing" and "Constructing diagrammatic representations of text." All data for **Instructional Time** are summarized in Table 12.

Table 12

ALLOCATION OF TIME FOR READING STUDY SKILLS INSTRUCTION

Analysis of Variance by Teacher Variable for Hypothesis 3

Dependent Variable: Reading Study Skill	Factor: Teacher Variable[1]	F	p	Multiple Comparisons
Surveying a textbook chapter	**Subject area**	12.24	<.0001	SS > M, E[2] S > M
	Ability level	5.82	<.01	GEN > AC[3]
Predicting content	**Subject area**	9.73	<.0001	E > M, S SS > M
	Years teaching	3.87	<.01	12+ > 7-9
	Courses in Reading	6.46	<.001	3+ > 0, 1 2 > 1
Identifying main ideas	**Courses in Reading**	3.68	<.01	3, 3+ > 1
Using textbook organizational devices	**Subject area**	4.89	<.01	S, SS > E
Posing questions from text	**Ed'l preparation**	3.81	<.01	B, B+, M, M+ > D[4]
Notetaking from text	**Subject area**	5.68	<.001	E, SS > M
	Gender	7.46	<.01	Female > Male
	Courses in Reading	5.98	<.001	2, 3 > 0, 1 3+ > 0
Paraphrasing	**Subject area**	5.34	<.01	E > S
	Gender	10.54	<.01	Female > Male
Summarizing	- - - - - - - -	- - - -	- - - -	- - - -
Outlining	**Subject area**	9.35	<.0001	E, S, SS > M
Constructing diagrammatic representations of text	- - - - - - - -	- - - -	- - - -	- - - -

Table 12 (continued)

Dependent Variable: Reading Study Skill	Factor: Teacher Variable[a]	F	p	Multiple Comparisons
Reciting material	Grade level	5.53	<.01	7-8 > 11-12
Using a textbook reading/study strategy	Subject area	4.57	<.01	S, SS > M

[1] For each skill, only those teacher variables with significant differences among groups are listed.

[2] For "Subject area," E = English; M = Mathematics; S = Science; SS = Social Science.

[3] For "Ability level," AC = Academic/College Prepatory/Advanced; GEN = General/Regular;
BASIC = Basic/ Developmental/Remedial.

4 For "Educational Preparation," B = BA/BS; B+ = BA/BS+; M = MA/MS/MEd/MAT;
M+ = MA/ MS/MEd/MAT+; D = PhD/EdD.

On the basis of the findings revealed through the statistical procedure of ANOVA, the sub-hypothesis $H_{3.1}$ *subject area taught*, is rejected for the following specific reading study skills: "Surveying a textbook chapter," "Predicting content," "Using textbook organizational devices," "Notetaking from text," "Paraphrasing," "Outlining," and "Using a textbook reading/study strategy." The sub-hypothesis $H_{3.2}$ *ability level taught* is rejected for the skill "Surveying a textbook chapter." The sub-hypothesis $H_{3.3}$ *grade level taught* is rejected for the skill, "Reciting material." The sub-hypothesis $H_{3.4}$ *gender* is rejected for two skills: "Notetaking from text," and "Paraphrasing." The sub-

hypothesis $H_{3.5}$ *years of teaching experience* is rejected for the skill "Predicting content." The sub-hypothesis $H_{3.6}$ *number of college-university courses in Reading* is rejected for the skills "Predicting content," "Identifying main ideas," and "Notetaking from text." The sub-hypothesis $H_{3.7}$ *level of educational preparation* is rejected for the skill "Posing questions from text."

Hypothesis 4

The extent to which course content is conveyed by the instructional mediums of textbook, supplementary written materials, and discussion/lecture/oral explanation (**Mediums of Instruction**) *does not differ relative to the following variables: $H_{4.1}$ subject area taught; $H_{4.2}$ ability level taught; $H_{4.3}$ grade level taught; $H_{4.4}$ gender; $H_{4.5}$ years of teaching experience; $H_{4.6}$ number of college/university courses in Reading; $H_{4.7}$ level of educational preparation.*

Significant differences among means for **Mediums of Instruction** were discerned for three teacher variables: *subject area taught, ability level taught,* and *grade level taught.* By *subject area taught,* differences were noted for the mediums of "Textbook" and "Supplementary written materials." Means for respondents from the content areas of mathematics and social science are higher than the means for respondents from the content areas of English and science, indicating that mathematics and social science teachers utilize "Textbook" to convey a greater proportion

of course content than English or science teachers. Also, English teachers utilize "Supplementary written materials" to convey a greater proportion of course content than teachers of any other subject area. In addition, science teachers utilize "Supplementary written materials" to convey a greater proportion of course content than mathematics teachers.

Table 13

MEDIUMS OF INSTRUCTION OF COURSE CONTENT

Analysis of Variance by Teacher Variable for Hypothesis 4

Dependent Variable: Medium of Instruction	Factor: Teacher Variable[1]	F	p	Multiple Comparisons
Textbook	**Subject area**	6.99	<.001	M, SS > E, S[2]
Supplementary Written Materials	**Subject area**	15.04	<.0001	E > M, S, SS S > M
	Ability level	5.21	<.01	BASIC > AC[3]
Discussion/Lecture/ Oral Explanation	**Ability level**	6.05	<.01	AC > GEN, BASIC
	Grade level	6.84	<.01	11-12 > 7-8, 9-10

[1] For each method, only those teacher variables with significant differences among groups are listed.

[2] For "Subject area," E = English; M = Mathematics; S = Science; SS = Social Science.

[3] For "Ability level," AC = Academic/College Prepatory/Advanced; GEN = General/Regular; BASIC = Basic/Developmental/Remedial.

By *ability level taught*, differences were noted for two mediums of instruction. Respondents who teach students enrolled in Basic/ Developmental/Remedial classes use "Supplementary written materials" to convey a greater proportion of course content than teachers of students who are enrolled in Academic/College preparatory classes. However, teachers of students enrolled in Academic/College preparatory classes utilize "Discussion/Lecture/ Oral explanation" to convey a greater proportion of course content than teachers of students who are enrolled in General/Regular classes or Basic/Developmental/Remedial classes.

By *grade level taught*, differences were noted for a single medium of instruction. Respondents who teach students in grades eleven and twelve utilize "Discussion/Lecture/Oral explanation" to convey a greater proportion of course content than teachers of student in grades seven and eight and teachers of students in grades nine and ten.

On the basis of the findings revealed through the statistical procedure of ANOVA, the sub-hypothesis $H_{4.1}$ *subject area taught* is rejected for the mediums of instruction, "Textbook" and "Supplementary written materials." The sub-hypothesis $H_{4.2}$ *ability level taught* is rejected for the mediums of instruction, "Supplementary written materials" and "Discussion/Lecture/Oral explanation." The sub-hypothesis $H_{4.3}$ *grade level taught* is rejected for the medium of instruction, "Discussion/ Lecture/Oral expanation." Data for Hypothesis 4 is summarized in Table 13.

Hypothesis 5

The extent to which teachers are confident of their ability to teach reading study skills (**Confidence**) *does not differ relative to the following teacher variables:* $H_{5.1}$ *subject area taught;* $H_{5.2}$ *ability level taught;* $H_{5.3}$ *grade level taught;* $H_{5.4}$ *gender;* $H_{5.5}$ *years of teaching experience;* $H_{5.6}$ *number of college/ university courses in Reading;* $H_{5.7}$ *level of educational preparation.*

For **Confidence**, differences were detected among means for three teacher variables: *subject area taught, grade level taught,* and *number of college/university courses in Reading.* Means for respondents from the subject area of English are higher than the means for respondents from the subject areas of mathematics and science, indicating that English teachers report a higher level of confidence to teach the reading study skills that students need than mathematics teachers or science teachers.

By *grade level*, a signicantly greater mean was obtained for respondents who teach students in grades seven and eight than was obtained for respondents of students in other secondary grades. This indicates that teachers of students in grades seven and eight report a higher level of confidence to teach reading study skills than teachers of students in grades nine and ten and teachers of students in grades eleven and twelve.

The variable, *number of college/university courses in Reading,* appears to influence the reported level of teacher

confidence. Respondents who completed more than three courses in Reading report a higher level of confidence than respondents who completed no course, one course, two courses, or three courses. Also, respondents who completed two courses in Reading report a higher level of confidence than respondents who completed no course or one course.

Table 14

TEACHER CONFIDENCE

Analysis of Variance by Teacher Variable for Hypothesis 5

Item: "I am confident of my ability to teach the reading study skills that students need."

Factor: Teacher Variable	F	p	Multiple Comparisons
Subject area	4.25	<.01	E > M, S
Grade level	7.48	<.001	7-8 > 9-10, 11-12
Courses in Reading	4.30	<.0001	3+ > 0, 1, 2, 3 2 > 0, 1

Note: Only those teacher variables with significant differences among groups are listed.

On the basis of the findings revealed through the statistical procedure of ANOVA, the sub-hypotheses $H_{5.1}$ *subject area taught*, $H_{5.3}$ *grade level taught*, and $H_{5.6}$ *number of college/university courses in Reading* are rejected for **Confidence**. Data for Hypothesis 5 is summarized in Table 14.

Hypothesis 6

The instructional procedures utilized in study skills instruction are not related to the following teacher variables: $H_{6.1}$ subject area taught; $H_{6.2}$ ability level taught; $H_{6.3}$ grade level taught; $H_{6.4}$ gender; $H_{6.5}$ years of teaching experience; $H_{6.6}$ number of college/university courses in Reading; $H_{6.7}$ level of educational preparation.

The inferential statistical procedure of *Chi*-square analysis was applied to the descriptive data relative to instructional procedures, in order to detect significant differences among the proportions of responses for each procedure. As Table 15 illustrates, differences were noted among proportions for only one teacher variable, *gender*. For two procedures, "Guided practice/application, individual basis" and "Reinforcement of instruction as needed," the proportions of responses from female respondents are significantly greater than the proportions of responses from male respondents. This data indicates that, when teaching reading study skills, female respondents utilize the two procedures to a greater extent than male respondents.

From the results of the test of *Chi*-square analysis, the sub-hypothesis $H_{6.4}$ *gender* is rejected for two procedures, "Guided practice/application, individual basis" and "Reinforcement of instruction as needed." Data relative to Hypothesis 5 is summarized in Table 15.

Table 15

INSTRUCTIONAL PROCEDURES UTILIZED IN READING STUDY SKILLS INSTRUCTION

Chi Square Analysis by Teacher Variable for Hypothesis 6

Dependent Variable: Procedure	Factor: Teacher Variable	*Chi*-square	*p*	Multiple Comparisons
Description of skill		- - -	- - -	- - -
Demonstration/Modeling skill		- - -	- - -	- - -
Guided practice/application, individual basis	**Gender**	7.00	<.01	Female > Male
Guided practice/application, student groups		- - -	- - -	- - -
Feedback to students on practice attempts		- - -	---	- - -
Explanation of benefits of using the skill		- - -	- - -	- - -
Encouragement to use the skill independently		- - -	- - -	- - -
Reinforcement of instruction as needed	**Gender**	14.47	<.001	Female > Male

Note: For each procedure, only those teacher variables with significant differences among groups are listed.

For Hypotheses 7, 8, 9, 10, and 11, t-tests of the Pearson correlation coefficient were applied in order to discover possible correlations among the descriptive data obtained relative to **Importance** and **Ability** (Hypothesis 7); **Importance** and **Instructional Time** (Hypothesis 8); **Ability** and **Instructional Time** (Hypothesis 9); **Course Content** and **Importance, Ability,** and/or **Instructional Time** (Hypothesis 10); and **Confidence** and **Instructional Time** (Hypothesis 11). Correlation matrices were constructed for illustrating the findings of the Pearson t-tests. (See Tables 16, 17, and 18.)

Hypotheses 7, 8, and 9

The three hypotheses that investigate relationships among the three dimensions of instruction, **Importance, Ability,** and **Instructional Time** are restated and discussed in this section. The hypotheses are:

H_7 *The perceived importance of study skills to student success* (**Importance**) *is not correlated with the perceived ability level of students to perform study skills* (**Ability**).

H_8 *The perceived importance of study skills to student success* (**Importance**) *is not correlated with the extent of instructional time allocated to teaching study skills* (**Instructional Time**).

H_9 *The perceived ability level of students to perform study skills* (**Ability**) *is not correlated with the extent of instructional time allocated to teaching study skills* (**Instructional Time**).

As illustrated in Table 16, significant relationships exist between all three dimensions for all reading study skills. (A correlation of .13 is required for statistical significance at the .01 level.) For H_7 **Importance** and **Ability**, the range among correlations is .26 for "Using textbook organizational devices" to .57 for "Constructing diagrammatic representations of text." For H_8 **Importance** and **Instructional Time**, larger correlations were discovered. The range among correlations is .44 for "Identifying main ideas" to .79 for "Reciting material." For H_9 **Ability** and **Instructional Time**, the range among correlations is from .26 for "Identifying main ideas" to .62 for "Constructing diagrammatic representations of text."

These data indicate that a small but significant relationship exists between **Importance** and **Ability**, and between **Ability** and **Instructional Time**. However, a greater positive relationship exists between **Importance** and **Instructional Time**. From the data as summarized in Table 16, Hypotheses 7, 8, and 9 as stated in their null forms are rejected.

Table 16

SIGNIFICANT RELATIONSHIPS AMONG THREE DIMENSIONS OF
READING STUDY SKILLS INSTRUCTION

Correlation Matrix for Hypotheses 7, 8, 9

Skill	Importance and Ability	Importance and Instructional Time	Ability and Instructional Time
Surveying a textbook chapter	.36	.53	.29
Predicting content	.39	.59	.38
Identifying main ideas	.33	.44	.26
Using textbook organizational devices	.26	.62	.28
Posing questions from text	.37	.57	.37
Notetaking from text	.35	.62	.45
Paraphrasing	.40	.58	.45
Summarizing	.30	.47	.35
Outlining	.39	.62	.52
Constructing diagrammatic representations of text	.57	.74	.62
Reciting material	.37	.79	.44
Using a textbook reading/ study strategy	.45	.66	.58

Note: A correlation of .133 is required for statistical significance at the .01 level.

Hypothesis 10

The medium of instruction of course content (**Mediums of Instruction**) *is not related to perceived importance of reading study skills* (**Importance**), *to perceived ability level of students to perform reading study skills* (**Ability**), *or to allocation of instructional time to teach reading study skills* (**Instructional Time**).

Out of 108 possible associations among the variables **Mediums of Instruction, Importance, Ability,** and **Instructional Time** for the twelve reading study skills, only eight statistically signficant correlations were discerned. However, although technically significant, these correlations are so small as to indicate that only trivial associations exist among dimensions of instruction and mediums of conveying course content. Therefore, Hypothesis 10 is not rejected. Data for Hypothesis 10 is presented in Table 17.

Hypothesis 11

The extent to which teachers are confident of their ability to teach reading study skills (**Confidence**) *is not correlated with the extent of instructional time allocated for teaching study skills* (**Instructional Time**).

Data for all respondents were examined for a possible relationship between the degree of teacher confidence and the extent of instructional time teachers spend in reading study skills

Table 17

SIGNIFICANT RELATIONSHIPS AMONG THREE DIMENSIONS OF READING STUDY SKILLS
INSTRUCTION AND MEDIUMS OF INSTRUCTION OF COURSE CONTENT

Correlation Matrix for Hypothesis 10[1]

Skill	Textbook			Supplementary Written Materials			Discussion/ Lecture/ Oral Explanation		
	I	A	T	I	A	T	I	A	T[2]
Surveying a textbook chapter	--	--	--	--	--	--	--	--	--
Predicting content	--	--	--	--	--	--	-.18	--	--
Identifying main ideas	--	--	--	--	--	--	-.17	--	--
Using textbook organizational devices	--	--	.21	--	--	--	-.16	--	-.21
Posing questions from text	--	--	.17	--	--	--	--	--	--
Notetaking from text	--	--	--	--	--	--	-.17	--	--
Paraphrasing	--	--	--	--	--	--	--	--	--
Summarizing	--	--	--	--	--	--	-.16	--	--
Outlining	--	--	--	--	--	--	--	--	--
Constructing diagrammatic representations of text	--	--	--	--	--	--	--	--	--
Reciting material	--	--	--	--	--	--	--	--	--
Using a textbook reading/ study strategy	--	--	--	--	--	--	--	--	--

[1] A correlation of .13 is required for statistical significance at the .01 level.
[2] I = Importance; A = Ability; T = Instructional Time.

instruction. Any correlation greater than .13 is statistically significant at the .01 level. Small correlations were discerned for six skills: "Surveying a textbook chapter" (.20); "Predicting content" (.28); "Identifying main ideas" (.18); "Summarizing" (.15); "Constructing diagrammatic representations of text" (.14); and, "Using a textbook reading/study strategy" (.16). Although statistically significant, these correlations are so small as to represent only trivial relationships between allocation of instructional time and the confidence of teachers to teach reading study skills. Therefore, Hypothesis 11 exploring the relationship between **Instructional Time** and **Confidence** is not rejected. Data related to H_{11} is presented in Table 18.

Data were discussed in this section relative to the eleven proposed hypotheses of the study. Of forty-nine statistical null hypotheses, a total of twenty-three were rejected for certain reading study skills, mediums of instruction, confidence level of teachers, or instructional procedures utilized in reading study skills instruction. In the following section, qualitative data from the follow-up telephone interviews is discussed.

Table 18

SIGNIFICANT RELATIONSHIPS BETWEEN TEACHER CONFIDENCE AND ALLOCATION OF TIME
FOR READING STUDY SKILLS INSTRUCTION

Correlation Matrix for Hypothesis 11

Instructional Time	Correlation with Confidence
Surveying a textbook chapter	.20
Predicting content	.28
Identifying main ideas	.18
Using textbook organizational devices	- - -
Posing questions from text	- - -
Notetaking from text	- - -
Paraphrasing	- - -
Summarizing	.15
Outlining	- - -
Constructing diagrammatic representations of text	.14
Reciting material	- - -
Using a textbook reading/ study strategy	.16

Note: A correlation of .13 is required for statistical significance at the .01 level.

The Follow-up Telephone Interviews

Telephone interviews were conducted with twenty respondents, five teachers from each of the four content areas. Interviewees were chosen through a random selection process from among those respondents who indicated their willingess to participate in a follow-up interview on the returned questionnaire. All data from the telephone interviews were hand-recorded and summarized by the investigator; data for all twenty interviews are in Appendix H, p. 227.

Each interviewee was asked a total of seven questions. All questions were open-response items. Two questions, those related to inhibiting factors (Question 4) and professional training (Question 5) emerged from a preliminary analysis of the quantitative data.

Responses that comprise the telephone interview data may not be representative of the views or perceptions of a majority of teachers of English, mathematics, science, or social science since bias is inherent in any data-gathering procedure in which participants are selected from among those who volunteer. However, a reasonable approach is to consider the extent to which responses of interviewees reinforce findings of the descriptive data obtained by the questionnaire. This perspective is reflected in the conclusions presented in Chapter 5. The form used to obtain data for the follow-up interviews is in Appendix G, p. 224.

To the first question, "What is your major concern regarding students' capabilities to study textbook or other written material?", respondents indicated a concern about the inability of students to read with understanding, or comprehension. Specifically, respondents expressed their concern that students are unable to locate main ideas, infer or interpret meaning, or understand the vocabulary of the specific subject matter.

Several other responses reflected a concern with how students are taught. One teacher cited his own disorganization for affecting the ability of students to learn well. Another teacher stated that children are not taught a procedure, or methodology, to apply to what they read. Other respondents cited a low level of reading abiity overall, i. e., students appear unprepared in terms of having been taught basic reading skills.

The second question for interviewees posed the product-process dilemma: "Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the 'what' of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?"

Most interviewees indicated that they subscribe to a needed emphasis on both "how to learn" and "what to learn." Many respondents expressed the view that teaching students how-to-learn skills enhances teaching subject matter. Representative of these responses was what one teacher stated: "I believe in both. I

teach subject matter. If you can show kids how to pick out main ideas, concepts, and supporting details, then I'm [sic] serving my subject matter. They're not opposing ideas." Of the twenty respondents, fourteen expressed the view that teaching process skills along with subject matter was their responsibility as a content teacher. However, the responses of four interviewees implied that they taught process skills only because the lack of previous training of students required them to do so.

The "allocation of instructional time" item on the questionnaire involved a response from "1" to "5," indicating an approximate degree to which teachers spend time teaching reading study skills. Hence, the third question for interviewees was intended to obtain a more exact figure for how much time teachers spend for instruction of reading study skills. Question three was, "Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?"

Almost all respondents found it difficult to give a response to this question in terms of a percentage. Frequently, the investigator was required to repeat the question and/or the respondent asked to have it repeated. A wide range of percentages characterize the responses of interviewees: 1 percent to 80 percent.

The fourth interview question was intended to obtain greater insight into the perceptions of teachers relative to the amount of

content they are required to cover. Because the majority of responses to the open-response questionnaire item, "What practical factors encourage or inhibit your teaching reading study skills?" identified inhibiting factors, and because the most frequently cited inhibiting factor was, "Lack of time," the fourth question posed to interviewees was: "A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?"

Most interviewees responded that they would engage in enrichment type of activities: use of media, computers, group work, cooperative learning, and other activities that encourage greater student involvement. Other responses included problem-solving and additional written work and discussion. One teacher remarked that he would become more creative in using materials other than the textbook. Five respondents indicated their teaching would not change at all because they have enough time now to teach the way they want to. Interestingly, four of the five respondents who indicated that they do not feel time pressure now are English teachers. Only two respondents said they would concentrate more on reading study skills; three others said they would concentrate more on general study habits and study skills of students.

The fifth question posed to interviewees also emerged from a finding obtained from the questionnaire data. To the open-response item, "What instructional assistance or provision(s) would enhance instruction of reading study skills in your classroom?", the most frequently given responses related to additional training. Interviewees, therefore, were asked their perceptions of the current requirement that all secondary teachers complete a course in Reading. The interview question was: "Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?"

Responses of most interviewees reflected a general skepticism of the value of the reading course and/or education courses in general. Eight respondents indicated that the course was not relevant to their needs. Several reasons were cited. One agreed that the state requirement was all right, but that the content of the course ". . . is not what it should be." Two interviewees said the specific reading course they had completed was not geared to content reading; it was, instead, intended for teaching reading in the elementary grades. One interviewee used the term "innocuous" to describe the course he had completed. However, another teacher who reported he had not gained a great

deal from the course was able to cite "structured overview" and "readability" as the two most valuable concepts presented in the course. Three interviewees addressed education courses in general, stating that no education course really prepares teachers for the reality of secondary classrooms.

Although several responses to question five were negative, three teachers responded affirmatively that the requirement was meeting the training needs of new teachers. Two of these respondents cited their observations of newly-hired teachers, that new hirees show a greater interest in teaching reading skills. One stated that many of his most recent ideas for teaching came from the newer teachers at his school. Three teachers had no opinion to question five; however, one respondent stated that the course he had completed was excellent. The remainder of responses were unique in nature: one stated that one course in reading is not enough; another respondent replied that the course needs to be taught more creatively; another said that conferences were more valuable for relevant training.

Question Five had a second part: "What suggestions for training do you have?" Most responses to this question were in one of two categories: suggestions for pre-service training and suggestions for in-service training. For pre-service training, the following suggestions were offered: provide more experience in classrooms as assistant teachers; emphasize reading, writing, studying, and the ability to teach these skills; include the study of

great teachers in college coursework for prospective teachers; provide training in teaching critical thinking; draw upon collegial expertise of teachers in the field; require that education students read *The Literacy Hoax;* provide more training in how to motivate students. Two respondents suggested that the content of the pre-service reading course be specialized according to academic subject area.

For in-service training, interviewees offered several suggestions. Respondents cited the need for relevance, applicability, and collegiality among teachers as requisite components. Two respondents emphasized that in-service be conducted by practicing master teachers in the field. Another respondent suggested that college credit be awarded for in-service training.

The remainder of responses for the second part of Question Five were unrelated to either pre-service or in-service training. One respondent cited the poor quality of people entering education as the major problem with training, and another stated that teachers are not well-prepared in general. One interviewee cited her personal experience of serving on a textbook committee as a valuable experience.

For the sixth interview question, a majority of responses reflected agreement that much more emphasis needs to be placed upon developing reading study skills among students. The question was, "Is there anything else you would like to tell me relevant to

teaching study skills to students?" Four respondents stated general agreement with the idea that teaching study skills is essential and needs more emphasis by teachers. Other responses included those of eight respondents who offered specific suggestions for promoting study skills instruction. One respondent advocated teaching time management to students and how to maintain an organized binder; another emphasized the need for teacher modeling. Two interviewees favor mandating instruction by requiring students to complete a course in study skills. Two interviewees emphasized the need to provide instruction early so that students have the necessary skills for studying in later grades, and two other respondents cited the need for schools to establish a school-home-pupil connection in order to promote study skills among students.

Other responses to Question 6 cited the need for more relevant materials, for a change in the attitudes or practices of some teachers, and for training students in thinking and problem-solving skills. Two interviewees indicated that they had no additional response to offer to the question.

To identify participants for a possible follow-up study, the final question posed to interviewees was, "Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?" Of the twenty interviewees, eighteen responded that they would be willing to be

participate in such a study; the other two interviewees expressed uncertainty.

Summary

Findings of data were discussed in this chapter. First, descriptive data were presented relative to the eight analysis questions of the central problem of this investigation. Each analysis question was restated and the relevant data was discussed. Next, findings of inferential procedures which were applied to the descriptive data were presented relative to the eleven proposed hypotheses of the study. On the basis of data derived from the procedures of ANOVA, *Chi*-square analysis, and t-tests of the Pearson correlation coefficient, twenty-three of forty-seven statistical null hypotheses were rejected for certain reading study skills, mediums of instruction, confidence level of teachers, or instructional procedures utilized in reading study skills instruction. The last portion of the chapter was a discussion of the findings of data obtained from twenty respondents who participated in follow-up telephone interviews.

In the next chapter, a summary of this investigation is presented. Conclusions from the obtained data are stated, and recommendations for future research and educational practice are proposed.

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

As students move from the elementary grades to the secondary grades, they are confronted by increased academic requirements that demand the ability to independently read and learn from text. Reading study skills are the tools by which students can achieve greater independence of learning and empowerment as life-long learners. Scholarly thought holds that teachers of academic subjects are in the best position to teach reading study skills because they can teach a given skill within the context in which it is required by their pupils.

This study has sought information relevant to the status of reading study skills instruction in four academic content areas of California secondary schools. The research was descriptive in nature and employed a survey design in which a questionnaire was the survey instrument. In this chapter, a summary of the investigation is presented which recapitulates its major elements and findings. Next, conclusions are drawn regarding the present state of reading study skills instruction. The conclusions are based upon observations of the data-gathering process and upon inferences that have been adduced from the data. Finally, the

investigator proposes recommended changes in educational practice and policy, and offers recommendations for future research.

Summary

The subjects of this investigation were teachers in the four academic content areas of English, mathematics, science, and social science who are currently teaching in California secondary schools. The central problem of the investigation was: *To what extent are academic content area teachers in California secondary schools providing instruction in reading study skills as part of their instructional program?* An analysis of the problem yielded eight questions that were addressed by the descriptive data which were obtained by the survey instrument. In addition, eleven hypotheses were proposed relevant to identifying further relationships among the data.

An extensive review of the reading literature related to study skills yielded twelve reading study skills that are most frequently recommended for direct instruction to pupils as independent learning skills. The review of literature also revealed nine instructional procedures that are recommended when teaching a reading study skill. These nine instructional procedures constitute a skill development model of instruction that shares similarities with the Hunter model of instruction for content lessons.

Three dimensions of instruction were identified for the twelve reading study skills derived from the review of literature. The dimension of **Importance** reflected Analysis Question 1: Which specific reading study skills do content area teachers perceive to be important to student success in the subject area in which they teach? The dimension of **Ability** reflected Analysis Question 2: What are the perceptions of content area teachers regarding the current ability level of students to perform reading study skills? The dimension of **Instructional Time** reflected Analysis Question 3: To what extent do content area teachers allocate time to the instruction of reading study skills?

The questionnaire was developed to reflect the twelve specific reading study skills and the nine instructional procedures identified from the review of literature. For each reading study skill, a scale of "1" to "5" was provided for each of the three dimensions of **Importance**, **Ability**, and **Instructional Time**. A value of "1" on the scale meant "Very Little" and a value of "5" on the scale meant "Very Much." This portion of the questionnaire, with the list of twelve reading study skills and the scale of values for each, obtained data to address Analysis Questions 1, 2, and 3. For each instructional procedure, a space was provided for respondents to indicate if they utilize the procedure when teaching a reading study skill. This section of the questionnaire obtained data to address Analysis Question 4: What instructional procedures do teachers utilize in study skills instruction?

Information regarding the confidence of teachers to teach reading study skills was obtained by a Likert-type item. Teachers were asked the extent of their agreement with the statement: "I am confident of my ability to teach the reading study skills that students need." Responses to this item provided data relative to Analysis Question 5: To what extent are teachers confident of their ability to teach the reading study skills that students need?

To verify the predominance of print as a medium of instruction in the secondary grades, and to explore relationships between mediums utilized and other data, another portion of the questionnaire requested respondents to indicate the percentage of course content they convey through three mediums of instruction. These questionnaire items obtained data to address Analysis Question 6: To what extent is course content conveyed by the mediums of: "Textbook," "Supplementary written materials," and "Discussion/lecture/oral explanation"?

The remainder of descriptive data that was obtained was in the form of answers to open-response items. Data obtained from open-response items contributed toward answering Analysis Questions 7 and 8. For Question 7, "What practical factors encourage and/or inhibit the efforts of teachers to teaching reading study skills?", the questionnaire item was: "What practical factors encourage or inhibit your teaching reading study skills?" For Question 8, "What assistance or instructional provisions would enhance the efforts of teachers to teach reading study skills?", the

questionnaire item was: "What assistance or instructional provision(s) would enhance instruction of reading study skills in your classroom?"

In addition to descriptive data to address the analysis questions, the questionnaire obtained demographic information related to seven teacher variables: subject area taught, ability level taught, grade level taught, gender, years of teaching experience, number of college/university courses in Reading, and level of educational preparation. This information enabled the researcher to apply inferential statistical procedures to the descriptive data in order to test the eleven proposed hypotheses of the study. The questionnaire also obtained data to enable follow-up telephone interviews; respondents were asked to provide their evening phone number if they were willing to participate in a telephone intervew.

Questionnaire packets were sent to principals of 172 secondary schools throughout the state of California. Principals were requested to distribute a questionnaire to one teacher in each of the four target content areas. A total of 688 questionnaires were distributed to schools, 172 questionnaires for each content area. An initial mailing and a follow-up mailing yielded a total of 374 (54.4 percent) responses. Responses by content area were: English, 92 (53.5 percent); mathematics, 94 (54.7 percent); science, 103 (59.9 percent); and, social science, 85 (49.4 percent).

Findings of the descriptive data obtained by the questionnaire revealed that teachers across all subject areas perceive all reading study skills as having at least moderate importance to student success. Teachers perceive the skill "Identifying main ideas" as having very high importance to student success. They perceive the following skills to be of high importance: "Surveying a textbook chapter," "Predicting content," "Using textbook organizational devices," "Posing questions from text," "Paraphrasing," and "Summarizing."

Teachers of all content areas perceive a high ability level of students to perform one reading study skill: "Identifying main ideas." They perceive a moderate ability level of students to perform all other reading study skills; hence, they do not perceive a low or very low ability of level of students to perform any of the skills.

Teachers across all content areas report that they allocate a high level of instructional time for two skills: "Identifying main ideas" and "Summarizing." They report that they allocate a moderate level of instructional time for teaching all other reading study skills.

In response to instructional procedures utilized in reading study skills instructon, high proportions of respondents from all content areas reported that they utilize all instructional procedures. They also expressed agreement with the statement, "I am confident of my ability to teach the reading study skills that

students need." Teachers utilize the medium of instruction, "Discussion/lecture/oral explanation," to a greater extent than either "Textbook" or "Supplementary written materials."

Respondents identified more factors that inhibit the instruction of reading study skills in their classrooms than encouraging factors. The major inhibiting factor cited was, "Lack of time." Two major forms of assistance/provisions would enhance their instruction of reading study skills: "Inservice/Additional training/Reading methods course or seminar" and "More/Greater variety of instructional materials."

The investigator applied the inferential statistical procedures of ANOVA, *Chi*-square analysis, and t-tests of the Pearson correlation coefficient to the descriptive data. These procedures yielded data relevant to the eleven proposed hypotheses of the study. Data for Hypotheses 1, 2, 3, 4, 5, and 6 revealed the extent to which mean scores varied by teacher variable for **Importance, Ability, Instructional Time, Mediums of Instruction, Confidence**, and **Procedures**. Procedures conducted relevant to Hypotheses 7, 8, and 9 examined possible associations among the three dimensions of **Importance, Ability,** and **Instructional Time**, and for Hypothesis 10, possible assocations among the dimensions of **Importance, Ability, Instructional Time** and **Mediums of Instruction.** Data generated relevant to Hypothesis 11 were examined for a possible association between **Instructional Time** and **Confidence**.

Findings of the inferential tests revealed that the perceived importance of reading study skills (H_1, **Importance**) to student success varies by subject area taught. Mathematics teachers perceive a lower value of importance for eight of the twelve reading study skills than English teachers *and/or* science teachers *and/or* social science teachers.

The perceived ability level of students to perform reading study skills (H_2, **Ability**) varies by subject area taught, ability level taught, and grade level taught. For eight skills, respondents from the content areas of English *and/or* science *and/or* social science perceive a greater ability level of students than respondents from the content area of mathematics. Teachers of students enrolled in academic/college preparatory classes perceive a greater ability level of students to perform nine of the twelve reading study skills than teachers of students enrolled in general/regular classes *and/or* basic/develomental/remedial classes. Teachers of students in grades eleven and twelve perceive a greater ability level of students to perform three skills than teachers of students in grades nine and ten.

For certain reading study skills, the reported level of instructional time (H_3, **Instructional Time**) allocated for reading study skills varies by all seven teacher variables. The proportion of course content conveyed through three mediums of instruction (H_4, **Mediums of Instruction**) varies by three teacher variables: subject area taught, ability level taught, and grade level taught.

Teachers in the content areas of mathematics and social science utilize "Textbook" to convey a greater proportion of course content than teachers in the content areas of English and science. English teachers utilize "Supplementary written materials" to convey a greater proportion of course content than mathematics, science, and social science teachers and science teachers utilize it to convey a greater proportion of course content than mathematics teachers. By ability level, teachers of students enrolled in basic/developmental/remedial classes utilize "Supplementary written material" to convey a greater proportion of course content than teachers of students enrolled in academic/college preparatory classes, and teachers of students enroled in academic/college preparatory classes utilize "Discussion/lecture/oral explanation" to convey a greater proportion of course content than teachers of students enrolled in general/regular classes or basic/developmental/remedial classes. By grade level, teachers of students in grades eleven and twelve utilize "Discussion/lecture/oral explanation" to convey a greater porportion of course content than teachers of students in grades seven and eight and teachers of student in grades nine and ten.

The extent of agreement with the statement, "I am confident of my ability to teach the reading study skills that students need," (H_5, **Confidence**) varies by subject area taught, grade level taught, and number of college/university courses in Reading. English teachers report greater confidence than mathematics or science

teachers. Teachers of students in grades seven and eight express greater confidence than teachers of students in grades nine and ten and teachers of students in grades eleven and twelve. Those respondents who completed more than three courses in Reading indicate more confidence than respondents who completed no course, one course, two courses, or three courses. Also, respondents who completed two courses indicate more confidence than respondents who completed no course or one course.

Differences among proportions of respondents who indicated they utilize instructional procedures for reading study skills instruction (H_6, **Procedures**) varied by gender for two procedures: "Guided practice/applicaton, individual basis" and "Reinforcement of instruction as needed." For both skills, a larger proportion of female respondents indicated they utilize the skill than male respondents.

Significant relationships exist among the three dimensions of **Importance**, **Ability**, and **Instructional Time**. A small but significant relationship was identified between **Importance** and **Ability** (H_7), and between **Ability** and **Instructional Time** (H_9). A greater positive relationship was discerned between **Importance** and **Instructional Time** (H_8).

The data revealed that no relationship exists between **Mediums of Instruction** and **Importance**, **Ability**, or **Instructional Time** (H_{10}). Similarly, no relationship exists between the level of reported **Teacher Confidence** and the extent

to which **Instructional Time** is allocated for teaching reading study skills (H_{11}).

Follow-up telephone interviews were conducted with twenty respondents who expressed a willingness to participate in such a interview. Responses of the telephone interviewees may not be representative of teachers in each of the content areas, since participants were selected from among those who volunteered.

Interviewees expressed concern about the inability of students to comprehend textbook material in general. They expressed support for the view of teaching that combines instruction of process skills along with content ideas. Responses of interviewees indicated that the percentage of instructional time accorded reading study skills instruction varies considerably teacher to teacher. If they were given more instructional time, interviewees reported they would engage students in enrichment-type activities.

Most interviewees expressed the view that the Reading methods course requirement for secondary teachers does not fulfill the training needs of new teachers. Interviewees offered several suggestions for both pre-service training and in-service training. The most common suggestion given was to involve practicing teachers in whatever training was provided. A majority of interviewees expressed the idea that more emphasis needs to be placed on training students in study skills. Two ways to effect greater emphasis are: require students to take and pass a course in

study skills; and, foster a broad base of support by creating a triad of school-home-student involvement.

The foregoing summary has reviewed the major elements of the problem of this investigation; it has also summarized the procedures that were carried out and the findings that were obtained. Next, conclusions drawn from findings of the data are discussed.

Conclusions

This section represents an extended answer to the problem: *To what extent are academic content area teachers in California secondary schools providing instruction in reading study skills as part of their instructional program?* The following discussion presents major conclusions based upon the data obtained in this investigaton.

Conclusions Related to the Descriptive Data

The researcher drew four major conclusions from the findings of the descriptive data. First, perceptions and practices of teachers in the content areas of English, mathematics, science, and social science who are currently teaching in California secondary schools are inconsistent with empirical research and scholarly opinion as identified in the review of the literature. To recapitulate briefly, for the issue of Importance (Analysis Question

1), both scholarly opinion and findings of empirical research support the idea that the ability to perform reading study skills is critically important to student success in the secondary grades. For the issue of Ability (Analysis Question 2), expert opinion concurs that secondary students demonstrate little ability to perform reading study skills; however, the researcher was unable to identify any empirical evidence that supports that consensus of opinion. Similarly, for the dimension of Instructional Time (Analysis Question 3), no studies were identified that examined specific allocation of time by secondary content area teachers for instruction of reading study skills, although, again, opinion in the literature was unanimous that secondary teachers spend little, if any, time on such instruction.

On the basis of the review of literature, therefore, for the dimension of Importance (Analysis Question 1), the researcher anticipated that teachers would indicate a high level of importance of reading study skills for student success in their respective subject areas. The data, reveal, however, that teachers perceive only seven reading study skills as having high importance for student success: the ability to identify main ideas, the ability to summarize, the ability to pose questions from text, the ability to use textbook organizational devices, the ability to paraphrase, the ability to survey a textbook chapter, and the ability to predict content. The single skill that teachers perceive to be the most important is the ability to identify main ideas. Teachers perceive

all other reading study skills as having moderate importance for student success.

For the dimension of Ability (Analysis Question 2), the researcher anticipated that respondents would indicate a low ability level among students to perform these skills. Findings of the data reveal, however, that teachers perceive a moderate ability level among students to perform eleven of twelve reading study skills. For the other skill, the ability to identify main ideas, teachers perceive students as having a high level of ability.

For the dimension of Instructional Time (Analysis Question 3), the researcher anticipated that respondents would report that they devote little time to teaching reading study skills. Teachers report, however, that they allocate a moderate level of instructional time for teaching ten of twelve reading study skills. Moreover, they report that they allocate a high level of instructional time for teaching two skills: the ability to identify main ideas and the ability to summarize.

The anticipated finding related to Analysis Question 4 was also based upon the opinion in the literature that teachers allocate little time for the instruction of reading study skills. The researcher anticipated that, since little time is allocated for instruction, teachers would indicate they utilize few, if any, specific procedures in such instruction. Again, however, in contrast to the literature, teachers in this study reported that they

utilize all of the nine recommended instructional procedures when teaching a reading study skill.

The discrepancies observed between the anticipated findings and findings of the data stand in marked contrast to the review of literature. The greatest inconsistencies appear to be related to Ability, Instructional Time, and Procedures. Although the literature claims that students have little ability to perform reading study skills, and that secondary teachers as a whole are not teaching reading study skills, teachers who responded in this study report that students have moderate to high ability levels to perform reading study skills and that they are, in fact, allocating moderate to high levels of instructional time to teaching the skills. Moreover, large proportions of respondents indicated that they utilize all of the recommended instructional procedures when teaching reading study skills. Because of these differences between the literature and the findings of the data, an examination of possible sources for the inconsistency is appropriate.

One caveat in considering the findings is that they are based upon teacher report, an acknowledged limitation of this study. A possibility exists that a discrepancy between actual practice and teacher report may have contributed to the unusual nature of the findings.

Another possible source of inconsistency is that teachers may be using a different frame of reference for the term, "reading study skills." A major concept related to the development of reading

study skills is fostering student independence. Indeed, as discussed in Chapter 2, one of the requisite criteria for compiling the list of twelve reading study skills from the literature was the degree to which scholars identified a given skill as promoting student independence of learning. A possibility exists that respondents in this study did not recognize the critical concept of teaching reading study skills for the goal of student independence; hence, they responded on the basis of what they do instructionally, within the classroom, to promote comprehension of written material, and they did not respond, as intended, on the basis of how well they train students to perform reading study skills independently. The possibility that teachers responded from a different frame of reference appears to be reinforced by the large proportion of responses that did not identify reading study skills when teachers wrote-in additional skills that they teach. (See Chapter 4, p. 110.)

A possible explanation for the high proportions of respondents who indicated that they utilize all procedures for reading study skills instruction may lie in the current popularity of the Hunter model for content instruction. The Hunter model has been widely disseminated to teachers through in-service training and professional journals. Since several similarities in terminology exist between the Hunter model and the skill-development model that was extrapolated from the literature, teachers may have reported procedures they utilize in delivering course content via

the Hunter model. (See Chapter 2 for a description of both models and the similarities between them.)

The fact that teacher report on these various points was so removed from scholarly opinion in the literature indicates a need for further research that investigates instructional practices of teachers through observational techniques. Such a recommendation is made in the final portion of this chapter. Even though teacher report as obtained in this study has been observed to be in distinct contrast to the literature, and aside from the suggestion that teachers may have responded from a different point of reference than intended, the remainder of conclusions are based upon the assumption that teachers responded according to their current perception of what the term "reading study skills" denotes.

A second conclusion related to the descriptive data is that teachers are confident of their ability to teach the reading study skills that students need for success in their classrooms; even so, they perceive that their efforts to teach reading study skills could be enhanced through additional training and through better quality, more readily-available materials.

Third, teachers experience frustration in attempting to provide for the learning needs of students, i. e., teach reading and process skills, given the amount of course content they are required to cover in the amount of instructional time that is available. The term "frustration" is used here to describe the nature of responses from the open-ended questionnaire item as

well as from responses from teachers who participated in the follow-up telephone interviews. Both written responses and verbal responses of interviewees reflected a dichotomy between what teachers want to do instructionally and what they believe they must do to fulfill the demands of covering a certain amount of content.

A final conclusion related to the descriptive data is that teachers in the content areas of English, mathematics, and science utilize the non-print medium of instruction, "Discussion/ lecture/oral explanation" to a greater extent than any single print medium of instruction; teachers in the content area of social science utilize the print medium, "Texbook," to a greater extent than any other single medium of instruction. However, teachers of all four content areas utilize print mediums of instruction to deliver a greater proportion of course content than non-print mediums; that is, considering the two print mediums, "Textbook" and "Supplementary written materials" together, more course content is conveyed through print mediums than non-print mediums.

Conclusions Related to the Inferential Data

From findings of the inferential tests applied to the descriptive data, the researcher drew two major conclusions. First, for the perceptions and practices of teachers relative to **Importance, Ability, Instructional Time, Mediums of Instruction**, and **Teacher Confidence**, the single variable that

accounts for the most differences among teachers is *subject area taught*. Perceptions of teachers related to **Ability** and practices of teachers related to **Mediums of Instruction** also vary by *ability level taught*.

In addition to *subject area taught*, **Teacher Confidence** is also associated with *grade level taught* and *number of college/university courses in Reading*. Teachers of students in grades seven and eight are more confident than teachers of students in the other secondary grades, and respondents who have completed two or more than three courses in Reading are more confident of their ability to teach reading study skills.than respondents who have completed no course or one course in Reading.

The second major conclusion derived from the inferential data is that perceptions and practices of teachers with respect to **Importance, Ability**, and **Instructional Time** are related. Three positive correlations exist among these dimensions of instruction. First, the importance that teachers attach to reading study skills is associated with the extent to which they perceive students as having the ability to perform the skills. Similarly, the extent of instructional time allocated by teachers for reading study skills instruction is associated with their perceptions of the ability of students to perform the skills. Third, an even greater association exists between the perceptions of teachers related to importance and their allocation of instructional time for teaching

reading study skills. That is, the more important teachers perceive a skill to be, the more instructional time is given for teaching it.

The anticipated findings projected for the proposed hypotheses of this study related to Hypotheses 1 (**Importance**), 3 (**Instructional Time**), and 5 (**Confidence**) for the single teacher variable, *number of college/university courses in Reading.* The investigator surmised that background knowledge gained from having completed a reading methods course would contribute to a higher perception of importance, a higher level of allocation of instructional time, and greater confidence to teach reading study skills for those respondents who had completed such a course than respondents who had not completed a reading methods course. None of these anticipated findings was borne out by the data. Rather, for H_3 **Instructional Time** and H_5 **Confidence**, differences by *number of college/university courses in Reading* were discerned for respondents completing two courses or more than three courses in reading.

The fact that one course in Reading methodology failed to account for any difference in **Importance**, **Instructional Time**, or **Confidence**, and the observation that greater confidence is associated with more than one course in Reading, appear to strongly support the finding of the descriptive data that additional training is a major form of assistance that would improve the attempts of teachers to teach reading study skills. The responses of several interviewees that the current reading methods

requirement for the professional preparation of teachers is not adequately meeting the training needs of new teachers also reinforces the potential value of more training in Reading methodology.

Seven major conclusions based upon the findings of descriptive and inferential data were discussed in this section. These conclusions provide the necessary rationale by which the researcher proposes recommendations for responses to this study.

Recommendations

Although numerous recommendations could be made based upon the data gathered in this investigation, three major recommendations appear to be most germane to the central issues identified with respect to instruction of reading study skills in the content areas of English, mathematics, science, and social science. These recommendations are:

1. That further research, involving direct classroom observation of instructional practices, be designed and conducted to investigate the allocation of time for teaching reading study skills in content area classrooms in order to determine the ratio of process versus content instruction that is being provided for secondary students;

2. That at the highest levels of educational policy-making, as well as at the county and local levels of schooling, the issue of

coverage of content versus the quality of teaching and learning be examined as a critical issue related to teacher effectiveness. Implementation of this recommendation would embrace a view of the interaction between teacher, student, and subject matter as the single most important element of schooling, and would seek to empower teachers in determining the appropriate emphasis of instruction;

3. That school districts and other educational agencies provide extensive in-service opportunities to teachers in order to promote a greater understanding of the importance of reading study skills and to develop their expertise in techniques of reading study skills instruction.

Appendix A

Cover Letters to Principals: Initial Mailing

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

DEPARTMENT OF
CURRICULUM AND INSTRUCTION

April 20, 1987

Dear

We have selected your school for inclusion in an important state-wide survey of
the perceptions and practices of secondary teachers (grades 7 through 12) who
teach in four academic subject areas: English, mathematics, science, and social
science. As principal, you are in a crucial position to help us in obtaining a good
response rate. We do not have access to names of individual teachers by subject
area, so we are seeking to enlist your cooperation in helping us collect data.

Please find enclosed questionnaires for four teachers, one in each of the four
subject areas. Attached to each questionnaire is a letter to the teacher and a
self-addressed, stamped envelope. Please select a teacher from each subject
area, and whose surname is closest to Ddd, and give the appropriate questionnaire
to each one. (If teachers have split assignments, please select from those
teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be
greatly appreciated. With a good response rate, we will be able to describe
practices which teachers have found to be effective in classroom teaching and to
describe their perceptions of students' learning needs. We believe this
information will be helpful to both practicing and preservice teachers.

We are deeply appreciative of your willingness to help us in obtaining information
"from the field." As a gesture of our appreciation, we will send a summary of the
survey results to each responding school upon completion of the study. Thank you!

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes (4)

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area, so we are seeking to enlist your cooperation in helping us collect data.

Please find enclosed questionnaires for four teachers, one in each of the four
subject areas. Attached to each questionnaire is a letter to the teacher and a
self-addressed, stamped envelope. Please select a teacher from each subject
area, and whose surname is closest to L11, and give the appropriate questionnaire
to each one. (If teachers have split assignments, please select from those
teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be
greatly appreciated. With a good response rate, we will be able to describe
practices which teachers have found to be effective in classroom teaching and to
describe their perceptions of students' learning needs. We believe this
information will be helpful to both practicing and preservice teachers.

We are deeply appreciative of your willingness to help us in obtaining information
"from the field." As a gesture of our appreciation, we will send a summary of the
survey results to each responding school upon completion of the study. Thank you!

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes (4)

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
                                              95211

DEPARTMENT OF
CURRICULUM AND INSTRUCTION
April 20, 1987

Dear

We have selected your school for inclusion in an important state-wide survey of
the perceptions and practices of secondary teachers (grades 7 through 12) who
teach in four academic subject areas: English, mathematics, science, and social
science. As principal, you are in a crucial position to help us in obtaining a good
response rate. We do not have access to names of individual teachers by subject
area, so we are seeking to enlist your cooperation in helping us collect data.

Please find enclosed questionnaires for four teachers, one in each of the four
subject areas. Attached to each questionnaire is a letter to the teacher and a
self-addressed, stamped envelope. Please select a teacher from each subject
area, and whose surname is closest to **Ppp**, and give the appropriate questionnaire
to each one. (If teachers have split assignments, please select from those
teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be
greatly appreciated. With a good response rate, we will be able to describe
practices which teachers have found to be effective in classroom teaching and to
describe their perceptions of students' learning needs. We believe this
information will be helpful to both practicing and preservice teachers.

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Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes (4)

April 20, 1987

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teach in four academic subject areas: English, mathematics, science, and social
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area, so we are seeking to enlist your cooperation in helping us collect data.

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subject areas. Attached to each questionnaire is a letter to the teacher and a
self-addressed, stamped envelope. Please select a teacher from each subject
area, and whose surname is closest to Ttt, and give the appropriate questionnaire
to each one. (If teachers have split assignments, please select from those
teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be
greatly appreciated. With a good response rate, we will be able to describe
practices which teachers have found to be effective in classroom teaching and to
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survey results to each responding school upon completion of the study. Thank you!

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes (4)

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

DEPARTMENT OF
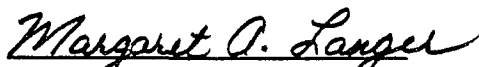CURRICULUM AND INSTRUCTION

April 20, 1987

Dear

We have selected your school for inclusion in an important state-wide survey of
the perceptions and practices of secondary teachers (grades 7 through 12) who
teach in four academic subject areas: English, mathematics, science, and social
science. As principal, you are in a crucial position to help us in obtaining a good
response rate. We do not have access to names of individual teachers by subject
area, so we are seeking to enlist your cooperation in helping us collect data.

Please find enclosed questionnaires for four teachers, one in each of the four
subject areas. Attached to each questionnaire is a letter to the teacher and a
self-addressed, stamped envelope. <u>Please select a teacher from each subject
area, and whose surname is closest to **Yyy**, and give the appropriate questionnaire
to each one.</u> (If teachers have split assignments, please select from those
teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be
greatly appreciated. With a good response rate, we will be able to describe
practices which teachers have found to be effective in classroom teaching and to
describe their perceptions of students' learning needs. We believe this
information will be helpful to both practicing and preservice teachers.

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"from the field." As a gesture of our appreciation, we will send a summary of the
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Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes (4)

Appendix B

Cover Letters of Content Area Teachers: Initial Mailing

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

**DEPARTMENT OF
CURRICULUM AND INSTRUCTION**

April 20, 1987

Dear Colleague:

Because of your interest in teaching English, we hope you will participate in a
state-wide survey of English teachers. We have selected your school for inclusion
in an important study and have requested your principal to give this letter and
attached questionnaire to you. The purpose of the study is to determine English
teachers' perceptions of students' abilities to study and retain information from
textbooks and the importance of such skills for student success. We also seek
information about how much instructional time English teachers spend teaching
these skills and which instructional practices they utilize.

We ask that you take 10-15 minutes to complete the questionnaire and return it in
the envelope by **May 1, 1987.** With a good response rate, we will be able to
describe practices which teachers, such as yourself, have found to be effective in
classroom teaching and to describe your perceptions of students' learning needs.
We believe this information will be helpful to both practicing and preservice
teachers.

Thank you very much for your prompt response.

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Attachments: Questionnaire
Return envelope

P.S. Results of this study will be made available to interested participants.
Please indicate your interest in receiving a summary of the results by writing
your name and address at the end of the questionnaire.

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

DEPARTMENT OF
CURRICULUM AND INSTRUCTION

April 20, 1987

Dear Colleague:

Because of your interest in teaching mathematics, we hope you will participate in a state-wide survey of math teachers. We have selected your school for inclusion in an important study and have requested your principal to give this letter and attached questionnaire to you. The purpose of the study is to determine math teachers' perceptions of students' abilities to study and retain information from textbooks and the importance of such skills for student success. We also seek information about how much instructional time math teachers spend teaching these skills and which instructional practices they utilize.

We ask that you take 10-15 minutes to complete the questionnaire and return it in the envelope by **May 1, 1987**. With a good response rate, we will be able to describe practices which teachers, such as yourself, have found to be effective in classroom teaching and to describe your perceptions of students' learning needs. We believe this information will be helpful to both practicing and preservice teachers.

Thank you very much for your prompt response.

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Attachments: Questionnaire
              Return envelope

P.S. Results of this study will be made available to interested participants. Please indicate your interest in receiving a summary of the results by writing your name and address at the end of the questionnaire.

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

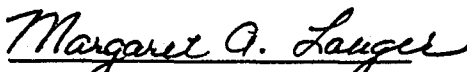DEPARTMENT OF
CURRICULUM AND INSTRUCTION

April 20, 1987

Dear Colleague:

Because of your interest in teaching science, we hope you will participate in a state-wide survey of science teachers. We have selected your school for inclusion in an important study and have requested your principal to give this letter and attached questionnaire to you. The purpose of the study is to determine science teachers' perceptions of students' abilities to study and retain information from textbooks and the importance of such skills for student success. We also seek information about how much instructional time science teachers spend teaching these skills and which instructional practices they utilize.

We ask that you take 10-15 minutes to complete the questionnaire and return it in the envelope by **May 1, 1987.** With a good response rate, we will be able to describe practices which teachers, such as yourself, have found to be effective in classroom teaching and to describe your perceptions of students' learning needs. We believe this information will be helpful to both practicing and preservice teachers.

Thank you very much for your prompt response.

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Attachments: Questionnaire
              Return envelope

P.S. Results of this study will be made available to interested participants. Please indicate your interest in receiving a summary of the results by writing your name and address at the end of the questionnaire.

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

DEPARTMENT OF
CURRICULUM AND INSTRUCTION

April 20, 1987

Dear Colleague:

Because of your interest in teaching the social sciences, we hope you will
participate in a state-wide survey of social science teachers. We have selected
your school for inclusion in an important study and have requested your principal
to give this letter and attached questionnaire to you. The purpose of the study is
to determine social science teachers' perceptions of students' abilities to study
and retain information from textbooks and the importance of such skills for
student success. We also seek information about how much instructional time
social science teachers spend teaching these skills and which instructional
practices they utilize.

We ask that you take 10-15 minutes to complete the questionnaire and return it in
the envelope by **May 1, 1987.** With a good response rate, we will be able to
describe practices which teachers, such as yourself, have found to be effective in
classroom teaching and to describe your perceptions of students' learning needs.
We believe this information will be helpful to both practicing and preservice
teachers.

Thank you very much for your prompt response.

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Attachments: Questionnaire
              Return envelope

P.S. Results of this study will be made available to interested participants.
Please indicate your interest in receiving a summary of the results by writing
your name and address at the end of the questionnaire.

Appendix C

Questionnaires to Content Area Teachers

READING STUDY SKILLS SURVEY—ENGLISH

Sex (Check one)	Number of College/ University Courses in Reading (Check one)	Education (Check one)	Years Teaching Experience (Check one)
	__ 0	__ BA/BS	__ 1-3
	__ 1	__ BA/BS+	__ 4-6
__ Female	__ 2	__ MA/MS/MEd/MAT	__ 7-9
__ Male	__ 3	__ MA/MS/MEd/MAT+	__ 10-12
	__ 3+	__ PhD/EdD	__ 12+

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Important: You may teach different ability levels and grade levels of English. Please indicate the ability level and grade level of English courses that you <u>primarily</u> teach, and respond to all questionnaire items from that perspective. (Check one for **Ability Level** and one for **Grade Level**.)

Ability Level: ___ academic/college prep/advanced ___ general/regular ___ basic/developmental/remedial

Grade Level: ___ 7-8 ___ 9-10 ___ 11-12

I. <u>Directions</u>: Several study skills related to textbook reading are listed below. These are skills that enable students to study more productively on an independent basis by helping them to remember and recall textbook ideas. In responding to each item, please consider the <u>typical learning tasks</u> related to textbook reading <u>required of the students</u> you teach in your primary subject area. For each skill, rate the following dimensions on a scale of 1 to 5 where: **1 = Very Little   5 = Very Much**

Key: **Importance**: Use of this skill would improve students' performance in my class.

Ability: Students demonstrate the ability to perform this skill. (If uncertain, circle the "?".)

Instructional time: I spend time teaching this skill.

	Importance		Ability		Instructional Time	
	Very Little	Very Much	Very Little	Very Much	Very Little	Very Much
1. Surveying a textbook chapter	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
2. Predicting ideas of the material to be read	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
3. Identifying main ideas	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
4. Using textbook organizational devices (chapter headings, subheadings, introductions summaries, different-face type, etc.)	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
5. Posing questions from text	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
6. Notetaking from text	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
7. Paraphrasing	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
8. Summarizing	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
9. Outlining	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
10. Constructing diagrammatic representations of text (diagrams of ideas such as structured overviews, information matrices, idea maps, etc.)	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
11. Reciting material to be learned	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
12. Using a textbook reading/study strategy (a set of skills such as SQ3R)	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
Other study skills (please identify) 13. _____	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	

READING STUDY SKILLS SURVEY—MATHEMATICS

Sex (Check one)	Number of College/ University Courses in Reading (Check one)	Education (Check one)	Years Teaching Experience (Check one)
___Female ___Male	___0 ___1 ___2 ___3 ___3+	___BA/BS ___BA/BS+ ___MA/MS/MEd/MAT ___MA/MS/MEd/MAT+ ___PhD/EdD	___1-3 ___4-6 ___7-9 ___10-12 ___12+

~~~~~~

Important: You may teach different ability levels and grade levels of math. Please indicate the ability level and grade level of math courses that you <u>primarily</u> teach, and respond to all questionnaire items from that perspective. (Check one for **Ability Level** and one for **Grade Level**.)

Ability Level: ___ academic/college prep/advanced ___ general/regular ___ basic/developmental/remedial

Grade Level: ___ 7-8 ___ 9-10 ___ 11-12

I. <u>Directions:</u> Several study skills related to textbook reading are listed below. These are skills that enable students to study more productively on an independent basis by helping them to remember and recall textbook ideas. In responding to each item, please consider the <u>typical learning tasks</u> related to textbook reading <u>required of the students</u> you teach in your primary subject area. For each skill, rate the following dimensions on a scale of 1 to 5 where: **1 = Very Little   5 = Very Much**

<u>Key:</u> **Importance:** Use of this skill would improve students' performance in my class.

Ability: Students demonstrate the ability to perform this skill. (If uncertain, circle the "?".)

Instructional time: I spend time teaching this skill.

	Importance		Ability		Instructional Time	
	Very Little	Very Much	Very Little	Very Much	Very Little	Very Much
1. Surveying a textbook chapter	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
2. Predicting ideas of the material to be read	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
3. Identifying main ideas	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
4. Using textbook organizational devices (chapter headings, subheadings, introductions summaries, different-face type, etc.)	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
5. Posing questions from text	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
6. Notetaking from text	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
7. Paraphrasing	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
8. Summarizing	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
9. Outlining	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
10. Constructing diagrammatic representations of text (diagrams of ideas such as structured overviews, information matrices, idea maps, etc.)	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
11. Reciting material to be learned	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
12. Using a textbook reading/study strategy (a set of skills such as SQ3R)	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	
Other study skills (please identify) 13. _____	1 2 3 4 5		1 2 3 4 5 ?		1 2 3 4 5	

READING STUDY SKILLS SURVEY—SCIENCE

Sex (Check one)	Number of College/ University Courses in Reading (Check one)	Education (Check one)	Years Teaching Experience (Check one)
___Female ___Male	___0 ___1 ___2 ___3 ___3+	___BA/BS ___BA/BS+ ___MA/MS/MEd/MAT ___MA/MS/MEd/MAT+ ___PhD/EdD	___1-3 ___4-6 ___7-9 ___10-12 ___12+

~~~~~~

Important: You may teach different ability levels and grade levels of science. Please indicate the ability level and grade level of science courses that you <u>primarily</u> teach, and respond to all questionnaire items from that perspective. (Check one for **Ability Level** and one for **Grade Level**.)

Ability Level: ___ academic/college prep/advanced ___ general/regular ___ basic/developmental/remedial

Grade Level: ___ 7-8   ___ 9-10   ___ 11-12

I. <u>Directions</u>: Several study skills related to textbook reading are listed below. These are skills that enable students to study more productively on an independent basis by helping them to remember and recall textbook ideas. In responding to each item, please consider the <u>typical learning tasks</u> related to textbook reading <u>required of the students</u> you teach in your primary subject area. For each skill, rate the following dimensions on a scale of 1 to 5 where: **1 = Very Little   5 = Very Much**

<u>Key</u>: **Importance**: Use of this skill would improve students' performance in my class.

Ability: Students demonstrate the ability to perform this skill. (If uncertain, circle the "?".)

Instructional time: I spend time teaching this skill.

	Importance Very Little — Very Much	Ability Very Little — Very Much	Instructional Time Very Little — Very Much
1. Surveying a textbook chapter	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
2. Predicting ideas of the material to be read	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
3. Identifying main ideas	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
4. Using textbook organizational devices (chapter headings, subheadings, introductions summaries, different-face type, etc.)	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
5. Posing questions from text	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
6. Notetaking from text	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
7. Paraphrasing	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
8. Summarizing	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
9. Outlining	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
10. Constructing diagrammatic representations of text (diagrams of ideas such as structured overviews, information matrices, idea maps, etc.)	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
11. Reciting material to be learned	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
12. Using a textbook reading/study strategy (a set of skills such as SQ3R)	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
Other study skills (please identify) 13. _____	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5

READING STUDY SKILLS SURVEY—SOCIAL SCIENCE

Sex (Check one)	Number of College/ University Courses in Reading (Check one)	Education (Check one)	Years Teaching Experience (Check one)
	__ 0	__ BA/BS	__ 1-3
	__ 1	__ BA/BS+	__ 4-6
__ Female	__ 2	__ MA/MS/MEd/MAT	__ 7-9
__ Male	__ 3	__ MA/MS/MEd/MAT+	__ 10-12
	__ 3+	__ PhD/EdD	__ 12+

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Important: You may teach different ability levels and grade levels of social science. Please indicate the ability level and grade level of social science courses that you <u>primarily</u> teach, and respond to all questionnaire items from that perspective. (Check one for **Ability Level** and one for **Grade Level**.)

Ability Level: ___ academic/college prep/advanced ___ general/regular ___ basic/developmental/remedial

Grade Level: ___ 7-8 ___ 9-10 ___ 11-12

I. <u>Directions</u>: Several study skills related to textbook reading are listed below. These are skills that enable students to study more productively on an independent basis by helping them to remember and recall textbook ideas. In responding to each item, please consider the <u>typical learning tasks</u> related to textbook reading <u>required of the students</u> you teach in your primary subject area. For each skill, rate the following dimensions on a scale of 1 to 5 where: **1 = Very Little   5 = Very Much**

<u>Key</u>:   **Importance**: Use of this skill would improve students' performance in my class.

Ability: Students demonstrate the ability to perform this skill. (If uncertain, circle the "?".)

Instructional time: I spend time teaching this skill.

	Importance Very Little — Very Much	Ability Very Little — Very Much	Instructional Time Very Little — Very Much
1. Surveying a textbook chapter	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
2. Predicting ideas of the material to be read	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
3. Identifying main ideas	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
4. Using textbook organizational devices (chapter headings, subheadings, introductions summaries, different-face-type, etc.)	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
5. Posing questions from text	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
6. Notetaking from text	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
7. Paraphrasing	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
8. Summarizing	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
9. Outlining	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
10. Constructing diagrammatic representations of text (diagrams of ideas such as structured overviews, information matrices, idea maps, etc.)	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
11. Reciting material to be learned	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
12. Using a textbook reading/study strategy (a set of skills such as SQ3R)	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5
Other study skills (please identify) 13. _____	1 2 3 4 5	1 2 3 4 5 ?	1 2 3 4 5

Appendix D

Cover Letters to Principals of Non-responding Schools:
Follow-up Mailing
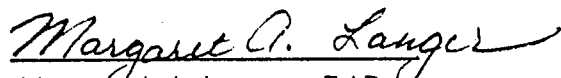
A special
request for
your help)
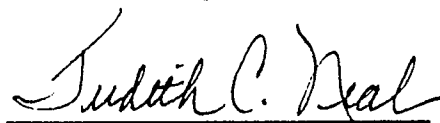
May 26, 1987

Dear   ,

Recently we contacted you by mail and requested your help in obtaining important information from selected teachers at your school by distributing a questionnaire to each of them. Since we have not received questionnaires from your school, we are asking for your help again. We are aware of the many demands on your time, especially now as the school year comes to a close. We hope you will recognize the potential value of the data we are seeking and will help us in obtaining a good response rate to this important state-wide survey of secondary teachers.

Enclosed please find a copy of our original letter describing the study and another set of cover letters, questionnaires, and return envelopes for teachers. Thank you for your help.

Margaret A. Langer, Ed.D.

Judith C. Neal, M.A.

May 26, 1987

Dear

We have selected your school for inclusion in an important state-wide survey of the perceptions and practices of secondary teachers (grades 7 through 12) who teach in four academic subject areas: English, mathematics, science, and social science. As principal, you are in a crucial position to help us in obtaining a good response rate. We do not have access to names of individual teachers by subject area, so we are seeking to enlist your cooperation in helping us collect data.

Please find enclosed questionnaires for four teachers, one in each of the four subject areas. Attached to each questionnaire is a letter to the teacher and a self-addressed, stamped envelope. <u>Please select a teacher from each subject area, and whose surname is closest to **Ddd**, and give the appropriate questionnaire to each one.</u> (If teachers have split assignments, please select from those teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be greatly appreciated. With a good response rate, we will be able to describe practices which teachers have found to be effective in classroom teaching and to describe their perceptions of students' learning needs. We believe this information will be helpful to both practicing and preservice teachers.

We are deeply appreciative of your willingness to help us in obtaining information "from the field." As a gesture of our appreciation, we will send a summary of the survey results to each responding school upon completion of the study. Thank you!

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes (4)

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

**DEPARTMENT OF
CURRICULUM AND INSTRUCTION**

May 26, 1987

Dear

We have selected your school for inclusion in an important state-wide survey of
the perceptions and practices of secondary teachers (grades 7 through 12) who
teach in four academic subject areas: English, mathematics, science, and social
science. As principal, you are in a crucial position to help us in obtaining a good
response rate. We do not have access to names of individual teachers by subject
area, so we are seeking to enlist your cooperation in helping us collect data.

Please find enclosed questionnaires for four teachers, one in each of the four
subject areas. Attached to each questionnaire is a letter to the teacher and a
self-addressed, stamped envelope. Please select a teacher from each subject
area, and whose surname is closest to **Hhh**, and give the appropriate questionnaire
to each one. (If teachers have split assignments, please select from those
teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be
greatly appreciated. With a good response rate, we will be able to describe
practices which teachers have found to be effective in classroom teaching and to
describe their perceptions of students' learning needs. We believe this
information will be helpful to both practicing and preservice teachers.

We are deeply appreciative of your willingness to help us in obtaining information
"from the field." As a gesture of our appreciation, we will send a summary of the
survey results to each responding school upon completion of the study. Thank you!

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes (4)

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION

95211

DEPARTMENT OF
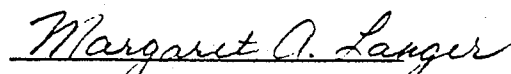CURRICULUM AND INSTRUCTION

May 26, 1987

Dear

We have selected your school for inclusion in an important state-wide survey of
the perceptions and practices of secondary teachers (grades 7 through 12) who
teach in four academic subject areas: English, mathematics, science, and social
science. As principal, you are in a crucial position to help us in obtaining a good
response rate. We do not have access to names of individual teachers by subject
area, so we are seeking to enlist your cooperation in helping us collect data.
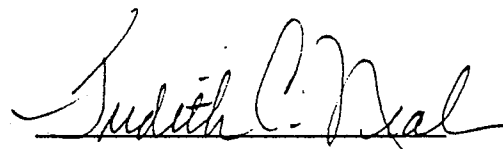
Please find enclosed questionnaires for four teachers, one in each of the four
subject areas. Attached to each questionnaire is a letter to the teacher and a
self-addressed, stamped envelope. Please select a teacher from each subject
area, and whose surname is closest to L11, and give the appropriate questionnaire
to each one. (If teachers have split assignments, please select from those
teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be
greatly appreciated. With a good response rate, we will be able to describe
practices which teachers have found to be effective in classroom teaching and to
describe their perceptions of students' learning needs. We believe this
information will be helpful to both practicing and preservice teachers.

We are deeply appreciative of your willingness to help us in obtaining information
"from the field." As a gesture of our appreciation, we will send a summary of the
survey results to each responding school upon completion of the study. Thank you!

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes (4)

May 26, 1987

Dear

We have selected your school for inclusion in an important state-wide survey of
the perceptions and practices of secondary teachers (grades 7 through 12) who
teach in four academic subject areas: English, mathematics, science, and social
science. As principal, you are in a crucial position to help us in obtaining a good
response rate. We do not have access to names of individual teachers by subject
area, so we are seeking to enlist your cooperation in helping us collect data.

Please find enclosed questionnaires for four teachers, one in each of the four
subject areas. Attached to each questionnaire is a letter to the teacher and a
self-addressed, stamped envelope. Please select a teacher from each subject
area, and whose surname is closest to **Ppp**, and give the appropriate questionnaire
to each one. (If teachers have split assignments, please select from those
teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be
greatly appreciated. With a good response rate, we will be able to describe
practices which teachers have found to be effective in classroom teaching and to
describe their perceptions of students' learning needs. We believe this
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survey results to each responding school upon completion of the study. Thank you!

Sincerely,

Margaret A. Langer   *Judith C. Neal*
Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes (4)

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION · Stockton, California Founded 1851
95211

DEPARTMENT OF
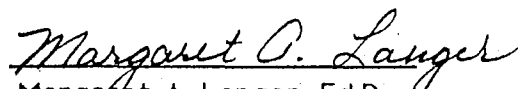CURRICULUM AND INSTRUCTION

May 26, 1987

Dear

We have selected your school for inclusion in an important state-wide survey of the perceptions and practices of secondary teachers (grades 7 through 12) who teach in four academic subject areas: English, mathematics, science, and social science. As principal, you are in a crucial position to help us in obtaining a good response rate. We do not have access to names of individual teachers by subject area, so we are seeking to enlist your cooperation in helping us collect data.
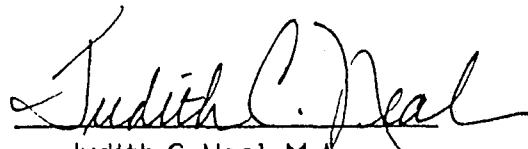
Please find enclosed questionnaires for four teachers, one in each of the four subject areas. Attached to each questionnaire is a letter to the teacher and a self-addressed, stamped envelope. <u>Please select a teacher from each subject area, and whose surname is closest to Ttt, and give the appropriate questionnaire to each one.</u> (If teachers have split assignments, please select from those teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be greatly appreciated. With a good response rate, we will be able to describe practices which teachers have found to be effective in classroom teaching and to describe their perceptions of students' learning needs. We believe this information will be helpful to both practicing and preservice teachers.

We are deeply appreciative of your willingness to help us in obtaining information "from the field." As a gesture of our appreciation, we will send a summary of the survey results to each responding school upon completion of the study. Thank you!

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes (4)

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

DEPARTMENT OF EDUCATIONAL
AND COUNSELING PSYCHOLOGY
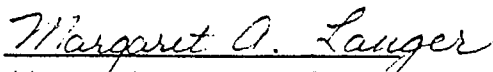
May 26, 1987

Dear

We have selected your school for inclusion in an important state-wide survey of the perceptions and practices of secondary teachers (grades 7 through 12) who teach in four academic subject areas: English, mathematics, science, and social science. As principal, you are in a crucial position to help us in obtaining a good response rate. We do not have access to names of individual teachers by subject area, so we are seeking to enlist your cooperation in helping us collect data.
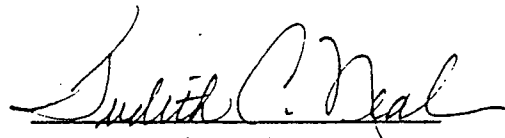
Please find enclosed questionnaires for four teachers, one in each of the four subject areas. Attached to each questionnaire is a letter to the teacher and a self-addressed, stamped envelope. Please select a teacher from each subject area, and whose surname is closest to Yyy, and give the appropriate questionnaire to each one. (If teachers have split assignments, please select from those teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be greatly appreciated. With a good response rate, we will be able to describe practices which teachers have found to be effective in classroom teaching and to describe their perceptions of students' learning needs. We believe this information will be helpful to both practicing and preservice teachers.

We are deeply appreciative of your willingness to help us in obtaining information "from the field." As a gesture of our appreciation, we will send a summary of the survey results to each responding school upon completion of the study. Thank you!

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes (4)

Appendix E

Cover Letters to Principals of Partially-responding Schools: Follow-up Mailing

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

**DEPARTMENT OF EDUCATIONAL
AND COUNSELING PSYCHOLOGY**

May 26, 1987

Dear

Recently we sent a set of questionnaires to you and asked that you distribute them as part of an important state-wide survey of the perceptions and practices of secondary teachers in four academic subject areas: English, mathematics, science, and social science.   We asked you to select a teacher from each subject area to complete and return a questionnaire. *Thank you for your cooperation!* We have received ____ questionnaires from teachers at your school, and we are deeply appreciative of your time and extra effort in helping us obtain a good response rate.

May we ask for additional assistance from you? We have not received questionnaires from your school for the following subject areas:

_____

Would you re-select a teacher from the subject area(s) indicated to complete a questionnaire? Enclosed is a questionnaire for each subject area. Attached to each questionnaire is a letter to the teacher and a self-addressed, stamped envelope. Please select a teacher for each subject area whose surname is closest to **Ddd,** and give the appropriate questionnaire to each one. (If teachers have split assignments, please select from those teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be greatly appreciated.   Again, thank you for your willingness to help us in obtaining information "from the field." A summary of the survey results will be sent to you upon completion of the study.

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

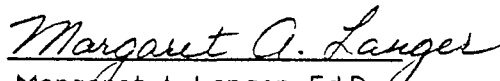DEPARTMENT OF
CURRICULUM AND INSTRUCTION

May 26, 1987

Dear

Recently we sent a set of questionnaires to you and asked that you distribute them as part of an important state-wide survey of the perceptions and practices of secondary teachers in four academic subject areas: English, mathematics, science, and social science. We asked you to select a teacher from each subject area to complete and return a questionnaire. *Thank you for your cooperation!* We have received ____ questionnaires from teachers at your school, and we are deeply appreciative of your time and extra effort in helping us obtain a good response rate.

May we ask for additional assistance from you? We have not received questionnaires from your school for the following subject areas:

_____

Would you re-select a teacher from the subject area(s) indicated to complete a questionnaire? Enclosed is a questionnaire for each subject area. Attached to each questionnaire is a letter to the teacher and a self-addressed, stamped envelope. Please select a teacher for each subject area whose surname is closest to **Hhh**, and give the appropriate questionnaire to each one. (If teachers have split assignments, please select from those teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be greatly appreciated. Again, thank you for your willingness to help us in obtaining information "from the field." A summary of the survey results will be sent to you upon completion of the study.

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes

UNIVERSITY OF THE PACIFIC

DEPARTMENT OF
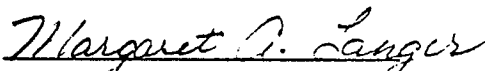CURRICULUM AND INSTRUCTION

May 26, 1987

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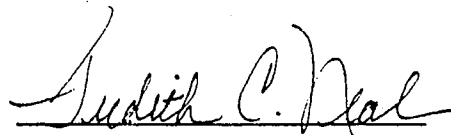
May we ask for additional assistance from you? We have not received questionnaires from your school for the following subject areas:

_____

Would you re-select a teacher from the subject area(s) indicated to complete a questionnaire? Enclosed is a questionnaire for each subject area. Attached to each questionnaire is a letter to the teacher and a self-addressed, stamped envelope. Please select a teacher for each subject area whose surname is closest to L1l, and give the appropriate questionnaire to each one. (If teachers have split assignments, please select from those teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be greatly appreciated. Again, thank you for your willingness to help us in obtaining information "from the field." A summary of the survey results will be sent to you upon completion of the study.

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

**DEPARTMENT OF EDUCATIONAL
AND COUNSELING PSYCHOLOGY**

May 26, 1987

Dear

Recently we sent a set of questionnaires to you and asked that you distribute them
as part of an important state-wide survey of the perceptions and practices of
secondary teachers in four academic subject areas: English, mathematics,
science, and social science. We asked you to select a teacher from each subject
area to complete and return a questionnaire. *Thank you for your
cooperation!* We have received ____ questionnaires from teachers at your
school, and we are deeply appreciative of your time and extra effort in helping us
obtain a good response rate.

May we ask for additional assistance from you? We have not received
questionnaires from your school for the following subject areas:

_____

Would you re-select a teacher from the subject area(s) indicated to complete a
questionnaire? Enclosed is a questionnaire for each subject area. Attached to
each questionnaire is a letter to the teacher and a self-addressed, stamped
envelope. Please select a teacher for each subject area whose surname is closest
to **Ppp**, and give the appropriate questionnaire to each one. (If teachers have split
assignments, please select from those teachers whose major teaching
responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be
greatly appreciated. Again, thank you for your willingness to help us in obtaining
information "from the field." A summary of the survey results will be sent to you
upon completion of the study.

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

May 26, 1987

Dear

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May we ask for additional assistance from you? We have not received questionnaires from your school for the following subject areas:

_____

Would you re-select a teacher from the subject area(s) indicated to complete a questionnaire? Enclosed is a questionnaire for each subject area. Attached to each questionnaire is a letter to the teacher and a self-addressed, stamped envelope. <u>Please select a teacher for each subject area whose surname is closest to Ttt, and give the appropriate questionnaire to each one.</u> (If teachers have split assignments, please select from those teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be greatly appreciated. Again, thank you for your willingness to help us in obtaining information "from the field." A summary of the survey results will be sent to you upon completion of the study.

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

DEPARTMENT OF
CURRICULUM AND INSTRUCTION
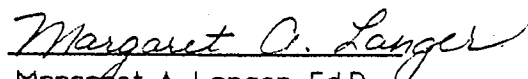
May 26, 1987

Dear

Recently we sent a set of questionnaires to you and asked that you distribute them as part of an important state-wide survey of the perceptions and practices of secondary teachers in four academic subject areas: English, mathematics, science, and social science. We asked you to select a teacher from each subject area to complete and return a questionnaire. *Thank you for your cooperation!* We have received ____ questionnaires from teachers at your school, and we are deeply appreciative of your time and extra effort in helping us obtain a good response rate.
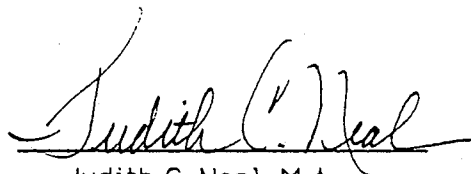
May we ask for additional assistance from you? We have not received questionnaires from your school for the following subject areas:

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Would you re-select a teacher from the subject area(s) indicated to complete a questionnaire? Enclosed is a questionnaire for each subject area. Attached to each questionnaire is a letter to the teacher and a self-addressed, stamped envelope. Please select a teacher for each subject area whose surname is closest to **Yyy**, and give the appropriate questionnaire to each one. (If teachers have split assignments, please select from those teachers whose major teaching responsibility is in the specified subject area.)

Any additional help you can provide us in encouraging a prompt response will be greatly appreciated. Again, thank you for your willingness to help us in obtaining information "from the field." A summary of the survey results will be sent to you upon completion of the study.

Sincerely,

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Enclosures: Questionnaires with cover letters and return envelopes

Appendix F

Cover Letters to Content Area Teachers: Follow-up Mailing

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION Stockton, California Founded 1851
95211

**DEPARTMENT OF EDUCATIONAL
AND COUNSELING PSYCHOLOGY**

May 26, 1987

Dear Colleague:

Because of your interest in teaching English, we hope you will participate in a
state-wide survey of English teachers. We have selected your school for
inclusion in an important study and have requested your principal to give this
letter and attached questionnaire to you. The purpose of the study is to
determine English teachers' perceptions of students' abilities to study and
retain information from textbooks and the importance of such skills for
student success. We also seek information about how much instructional time
English teachers spend teaching these skills and which instructional practices
they utilize.

We ask that you take 10-15 minutes to complete the questionnaire and return it
in the envelope by **June 5, 1987.** With a good response rate, we will be able
to describe practices which teachers, such as yourself, have found to be
effective in classroom teaching and to describe your perceptions of students'
learning needs. We believe this information will be helpful to both practicing
and preservice teachers.

Thank you very much for your prompt response.

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Attachments: Questionnaire
             Return envelope

P.S. Results of this study will be made available to interested participants.
Please indicate your interest in receiving a summary of the results by writing
your name and address at the end of the questionnaire.

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
                                                    95211

DEPARTMENT OF EDUCATIONAL
AND COUNSELING PSYCHOLOGY

May 26, 1987

Dear Colleague:

Because of your interest in teaching mathematics, we hope you will participate
in a state-wide survey of math teachers. We have selected your school for
inclusion in an important study and have requested your principal to give this
letter and attached questionnaire to you. The purpose of the study is to
determine math teachers' perceptions of students' abilities to study and retain
information from textbooks and the importance of such skills for student
success. We also seek information about how much instructional time math
teachers spend teaching these skills and which instructional practices they
utilize.

We ask that you take 10-15 minutes to complete the questionnaire and return it
in the envelope by **June 5, 1987.** With a good response rate, we will be able
to describe practices which teachers, such as yourself, have found to be
effective in classroom teaching and to describe your perceptions of students'
learning needs. We believe this information will be helpful to both practicing
and preservice teachers.

Thank you very much for your prompt response.

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Attachments: Questionnaire
             Return envelope

P.S. Results of this study will be made available to interested participants.
Please indicate your interest in receiving a summary of the results by writing
your name and address at the end of the questionnaire.

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
95211

DEPARTMENT OF EDUCATIONAL
AND COUNSELING PSYCHOLOGY

May 26, 1987

Dear Colleague:

Because of your interest in teaching science, we hope you will participate in a state-wide survey of science teachers. We have selected your school for inclusion in an important study and have requested your principal to give this letter and attached questionnaire to you. The purpose of the study is to determine science teachers' perceptions of students' abilities to study and retain information from textbooks and the importance of such skills for student success. We also seek information about how much instructional time science teachers spend teaching these skills and which instructional practices they utilize.

We ask that you take 10-15 minutes to complete the questionnaire and return it in the envelope by **June 5, 1987**. With a good response rate, we will be able to describe practices which teachers, such as yourself, have found to be effective in classroom teaching and to describe your perceptions of students' learning needs. We believe this information will be helpful to both practicing and preservice teachers.

Thank you very much for your prompt response.

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Attachments: Questionnaire
                    Return envelope

P.S. Results of this study will be made available to interested participants. Please indicate your interest in receiving a summary of the results by writing your name and address at the end of the questionnaire.

UNIVERSITY OF THE PACIFIC

SCHOOL OF EDUCATION   Stockton, California Founded 1851
                                      95211
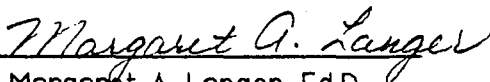
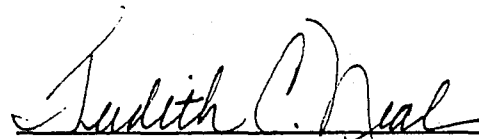DEPARTMENT OF EDUCATIONAL
AND COUNSELING PSYCHOLOGY

May 26, 1987

Dear Colleague:

Because of your interest in teaching the social sciences, we hope you will
participate in a state-wide survey of social science teachers. We have
selected your school for inclusion in an important study and have requested
your principal to give this letter and attached questionnaire to you. The
purpose of the study is to determine social science teachers' perceptions of
students' abilities to study and retain information from textbooks and the
importance of such skills for student success. We also seek information about
how much instructional time social science teachers spend teaching these
skills and which instructional practices they utilize.

We ask that you take 10-15 minutes to complete the questionnaire and return it
in the envelope by **June 5, 1987.** With a good response rate, we will be able
to describe practices which teachers, such as yourself, have found to be
effective in classroom teaching and to describe your perceptions of students'
learning needs. We believe this information will be helpful to both practicing
and preservice teachers.

Thank you very much for your prompt response.

Margaret A. Langer, Ed.D.   Judith C. Neal, M.A.

Attachments: Questionnaire
             Return envelope

P.S. Results of this study will be made available to interested participants.
Please indicate your interest in receiving a summary of the results by writing
your name and address at the end of the questionnaire.

Appendix G

Follow-up Telephone Interview Form

FOLLOW-UP TELEPHONE INTERVIEW FORM

Subject Area _____ Pool # 5 8 3 6 4 9 7 0 2 1

The interviewer will remind the interviewee of the questionnaire they completed in the spring and thank them for their willingness to participate in a follow-up interview. The interviewer will ascertain if the time of the call is convenient in terms of requiring approximately ten minutes of time. She will then proceed with the interview.

Interviewees will be asked to respond to each question on the basis of the ability level and grade level which they primarily teach. If they teach equal proportions of two different ability levels and/or grade-range levels, the interviewer will ask them to select one ability/grade-range level and to respond to all items from that perspective.

1. What is your major concern regarding students' capabilities to study textbook or other written material?

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

What suggestions for training do you have?

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?
YES   NO

Appendix H

Follow-up Telephone Interview Data

Interviewee: # 1   Subject Area: English
Grade Level Taught: 7-8   Ability Level Taught: Academic/College preparatory

_____

1. What is your major concern regarding students' capabilities to study textbook or other written material?

   Comprehension--main idea or details.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

   Both are involved in good teaching and learning. We need to show students how to get the "gems" from material and how to apply their reading skills.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

   I don't use the textbook all the time. I go back and review main ideas. Of total time, I spend 70% in going over material and assessing their comprehension.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

   I would focus on getting main ideas and details across completely. I'd have students do more writing, reading, discussion, and rereading. I'd have them do edit writing.

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

It depends on the teacher. Some have a natural approach that works; others need refining. One course is probably not enough.

What suggestions for training do you have?

Either the same course that teaches reading and writing together, or two separate courses for reading and writing.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

Ideally, if we want comprehension study skills to come across, we have to involve parents in the school-pupil-home partnership.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 2   Subject Area: English
Grade Level Taught: 7-8   Ability Level Taught: Academic/College preparatory

_____

1. What is your major concern regarding students' capabilities to study textbook or other written material?

That they are not taught how to read. They don't have the basic skills to read and process information. They want everthing verbalized and visualized.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

They need both. They need to have a core of knowledge to base their learning on. The core teacher has to provide a sound basis to build on. It's not an "either-or." I use writing as a natural way to do both. I use brain research on how kids learn. We must teach the connections among facts to make the jump to higher levels of thought. We must give them both--the core and the tools.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of studying written material)?

20% of every lesson is pre-reading activities. If it's new, I may spend 100% of time on it. I'd say 20% of every lesson, but this may be low. For everything, we go through the "what," "when," and "why." Especially the "why."

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are not required to cover an unreasonable amount of content in the time available (in other words, given more time), how would your instructional practices change?

That's a tough one. I find I don't have too little time now. Maybe because I wrote the curriculum is why. Once I've taught them how to jump the gaps, they can make great increases in how much they can read.

230

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

The requirement might be, but what is being taught in the courses is not being taught as it was intended to be. Something is going wrong. I loved my courses and got many ideas. Teaching is changing drastically. Different skills are being required to teach now.

What suggestions for training do you have?

More teaching in the specific skills for the subject areas. Reading and thinking go together in every subject. Classes should be for specific content areas.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

It's an uphill fight. Kids are too visual, too auditory. Kids are so keyed in to television and movies. We used to have respect; now we must perform as a teacher. Somewhere it must be taught that teachers don't stand up and give out information any more. It's working--scores are up after kids take my class.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

231

Interviewee: # 3   Subject Area: English
Grade Level Taught: 7-9   Ability Level Taught: General/Regular

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

A lack of understanding of major vocabulary in content areas. Because of our population of students, their home lives are not stable. I want students to learn some consistency in doing homework assignments and going through the reading in a consistent way. We're at a basic study skills level at our school.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

It needs to be their primary concern, especially in the middle grades. Students don't learn content without knowing how to learn and study content. Teachers have a large part in helping students read in their content area.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

40-50%.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

They probably would change by doing more of what I do already.

232

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

I don't think so. I took it recently. The class was useful but not for content reading. A lot of ideas weren't touched on. There was a lot on phonics. Judging from my peers, I don't think anyone is as prepared as they would like to be.

What suggestions for training do you have?

Concentrate on subject area and critical-type reading. There is not a lot of emphasis on study skills in the elementary reading course.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

Suggestion: in the middle grades (sixth to ninth), a required course to take in critical thinking and reading study skills would be helpful for all students. Teachers would know students had some basic knowledge of how to read and study critically.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes, but it would depend on my availability.

Interviewee: # 4   Subject Area: English
Grade Level Taught: 10-12   Ability Level Taught: Remedial

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

Simply understanding the material. I select material at their level. My concern is what happens in science and history. They seem to remember what they read because I use a lot of periodicals. My major concern is vocabulary--they don't get it.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

They should be able to teach the subject, but the reality is they can't because kids can't read. Our role is first to teach understanding of how to read the material; then, we can teach the concepts. Teachers don't want to recognize this change. Other teachers expect me to teach them [students] how to read and then they'll teach content.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

80%.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

They wouldn't. I don't have to cover any curriculum. I do whatever I want--it's wonderful. My major concern is making sure the materials are interesting to them [students].

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

I don't know. Sometimes, I wish the older teachers had to take it. Some new teachers rave about it; others say it was too general, not specific enough.

What suggestions for training do you have?

More experience in the classroom as an assistant. I send O & P [observation and participation] students [student teachers] with kids to the library to see what they're like.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

I wish we could change some of the teachers' attitudes. Children today are not like they were. We have to look at their needs, unfortunately.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 5   Subject Area: English
Grade Level Taught: 11-12   Ability Level Taught: Academic/College preparatory

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

That students don't apply the techniques they have learned previously.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

I agree with the "how to learn." Content area [information] has such a limited application to life. I want students to read and think in whatever they do.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of studying written material)?

10%.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

I'm not sure they would. I don't feel much pressure to cover a certain amount of material. I'm in a flexible setting. If I need more time, I take it. My teaching would not change appreciably.

236

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

> *No. It wasn't required when I was in school. I have additional training and if all teachers had more skill in teaching reading, other content area teachers would be able to teach needed skills. Many content teachers do not teach any.*

What suggestions for training do you have?

> *I don't think teachers are well prepared over all.*

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

> *I wish someone would do it before they get to the twelfth grade. Students have an expedient attitude at this grade so teaching them now might not help.*

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

> *I'm not sure.*

Interviewee: # 6   Subject Area: Mathematics
Grade Level Taught: 7-8   Ability Level Taught: General/Regular

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

I've always felt that teachers don't spend enough time teaching children a step-by-step process, a methodology. I give them a methodology. Teachers at the primary level do not give a standard methodology to give students a grasp of something.
Kids have no sense of organization. Students don't know there are other kinds of questions then "what" or "how." They don't know about evaluation questions. I lay the blame strictly on the children--we make them what we are.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

You can't separate the two when you start drawing dichotomies between "what" and "how." You cannot teach methodology toward goals if you don't know about the goals. To draw these dichotomies is absurd. To draw these ridiculous lines is a lot of crap. You are talking about the how and the what.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

80-90% I would say. I happen to think teaching is a very important thing. I spend most of the time taking them by the hand every single day. Other teachers give them dittoes--ditto queens are rampant throughout the lower grades. There is too much of leaving kids alone and saying, "We need to teach them independence." But you don't throw a kid into water without showing them how to stay afloat. Students don't know how to get a grip on anything and teachers--ditto queens--are responsible for it.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

I would probably become more creative. I've prided myself on working without books which is anathema in a situation where teachers depend so much on books that is not real. Textbook content is so poor. I don't know where they get the writers.

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

Yes and no. Occasionally we get some creative work in training classes. The problem with service training is that the teachers doing the training are still hung up on the notion of using too much of the book. Teachers are afraid to be creative. Somebody might come and downgrade them for not using the book. What is needed is more emphasis on direct dialog between teacher and student. The book is always in between the teacher and student.

What suggestions for training do you have?

There is too much of the same thing--content from a book instead of creating content with what you have.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

You hit the nail on the head with the dichotomy [issue]. What I say is that you cannot teach method without knowing content. Teachers need to be super prepared. You need content and you need delivery with the teacher in front [of the student] modeling instead of the ditto thing.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

239

Interviewee: # 7   Subject Area: Mathematics
Grade Level Taught: 7-8   Ability Level Taught: Academic/College Preparatory

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

Sometimes they are handed the book and told to learn. Students cannot get concepts from a textbook without teacher guidance. They have difficulty with inference--seeing beyond a given fact.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

The subject cannot be learned if the teacher does not teach the students how to learn. What are we working for? It's not a process of osmosis. One can never assume the student, especially accelerated, capable students--know how to study.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of studying written material)?

50%. Almost half of my teaching time is supplementary skills. It's an everyday occurrence. It's so second nature. Today, a good half of the period was spent on teaching how to read the algebra book.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are not required to cover an unreasonable amount of content in the time available (in other words, given more time), how would your instructional practices change?

Interesting that you should ask. This year we went to a seven-period day and we cut off seven minutes of every period. I'd like to give more opportunities for problem-solving activities. If I had more time, I would give more supplementary, challenging activities--[with students] setting up their own problems.

240

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

> *I have no idea. All I know is that the particular reading course I had was excellent and gave me the foundation I needed. I have no direct knowledge of whether it's meeting the need or not.*

What suggestions for training do you have?

> *Good old-fashioned reading skills [instruction] so a teacher doesn't assume students can read. You may not be able to use the skills learned for specific students. Project WRITE needs to be part of the college curriculum. I'd like to see the study of great teachers in teacher training courses.*

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

> *Just that it is essential. In our district, we have developed a booklet titled, "Study Skills," and have made a concerted effort this year to at least expose students to various study techniques.*

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

> *Yes.*

Interviewee: # 8   Subject Area: Mathematics
Grade Level Taught: 7-8   Ability Level Taught: Academic/College Preparatory

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

That they can read it and survey it properly.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

That's exactly what I do. I teach subject matter and math--it's a hard question. In teaching math, generally you teach math. I never require that they get initial exposure to content. Most books can't be understood at home. I say, "Survey it so you will have some idea [of what it's about] from reading it at home." Some do; some don't.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

10-15%.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

A lot toward teaching reading. Books have to be better written. Math books are very poorly written, too abstract.

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

Not even slightly. I've taught twenty-seven years and haven't taken a course for years. It was innocuous.

What suggestions for training do you have?

There should be a class where The Literacy Hoax *is the required text for people teaching [grades] six through twelve.*

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

They must be taught time management, to keep a calendar of assignments and an organized binder, have a regular time and place to study, and no T.V. One of our components is a school-wide emphasis on study skills--studying actively, aggressively, not passively.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 9   Subject Area: Mathematics
Grade Level Taught: 7-8   Ability Level Taught: Academic/College Preparatory

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

I find I have started using a math notebook and math kit. I lot of their poor performance was due to my lack of organization. A book, Every Minute Counts--*this guy has fantastic ideas. It's exciting. Homework quizzes, collecting and grading notebooks, a lot of methodology. I'd underline, "Come on, teachers. Get organized!"*

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

Well, the whole thing falls back on reading teachers. Kids show up in my class and can't read. It limits what I can do. When it comes to word problems, they get A's in reading but they need to be lead in the reading to set up the equation. They can't reason when it requires comprehension--discernment. We can all do better. I do every word problem with them. They need help.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

70%. I try to avoid assigning reading the textbook. It's not exciting and they won't do it anyway. In the past I did a lot of lecture; I'm spending more time in instruction.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

I wouldn't have to hurry. I'd do more enrichment, more student involvement, more participation. It would be a better job. I let the high school dictate to me what I cover. There is too much to do. It's constantly a race. Time is held constant and more content is added to it. I'd do a better job with more time.

244

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

This goes back twenty-six years. My reading methods course was geared to the elementary level at grades one to three and that's good for teachers doing that. I could do a better job if I had been given a[n appropriate] reading methods class or in-service training was required or offered. Yes, I'd be a better teacher.

What suggestions for training do you have?

Make it relevant for what you're asking me to do, appropriate and relevant help for where I am--junior high school. I'm being shown more and more enrichment ideas, but time is constant and I have more content to cover.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

I think math is camouflaged by words. Reading becomes very important. Whatever reading is required to do word problems is where we math teachers need help. Maybe we could help or reading teachers need to include reasoning in reading instruction. If students can't read, it's a bad grade right there. The more a student can read, the more math he can learn.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 10   Subject Area: Mathematics
Grade Level Taught: 9-10   Ability Level Taught: Academic/College Preparatory

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

I guess it's reading in the content areas. I don't think they know how to read. And they don't read them [textbooks]. I have the devil of a time to get them to read the book.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

I think we have to teach them both how to study the subject and the subject. So it's both. My problem is that kids aren't coming to us with good study habits. Even though we're getting more collegd-bound kids, they don't realize or are aware of the amount of work required to get there. They don't have family role models. They don't get the real impact until they get to school. They don't take it seriously and it's across the curriculum.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

No more than 5%. There is too much curriculum to cover. It's an on-going task. It's more during the first semester than the second. I do things, like with story problems, have kids say true/false on three levels. We do a mapping exercise for each chapter to give an overview of the chapter. I'm always stressing, "Have you read the material?"

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

I wouldn't even start the curriculum until students had a good foundation of study skills. I'd wait until I was satisfied that they knew what they were doing. It gets to be a competitive thing [with other teachers]--how far along we are in the book.

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

Yes. I haven't taken the course but several new hirees have taken the course. That's where I've picked up my ideas. It's doing an excellent job. They do more unit planning and design worksheets so much better. I'm really pleased with their style and thoroughness in planning a chapter.

What suggestions for training do you have?

As long as it's a requirement for the credential, it's doing it. I'm requesting instruction in reading in content areas as one of our staff in-service days.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

Along with study skills at our school, I try to give students a library research project for extra credit. They have actual topics from math to do research on. Also, the writing is another type of skill I emphasize. Even on their homework they should make a statement about where they first got hung-up.

Kids need a lot of help in organizing a notebook and taking notes. Everyone's assuming these things are being taught. We need a lot more emphasis on it. It's a big area that needs a lot of improvement.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 11   Subject Area: Science
Grade Level Taught: 7-8   Ability Level Taught: General/Regular

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

They are totally unable to really understand the content. I have a rich district; we have bought the best books. When children read them, they are totally unable to comprehend them. I have given up on textbooks, so I have written my own with all hands-on activities following Piagetian principles. Only 6-7% of students can understand textbooks now. At Scott Foresman I argued with them about this. What they are doing for seventh-grade science is garbage.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

They not only have to teach subject matter but specific methods for approaching the subject matter. The skill of studying math is very different from studying science. I perceive the role to teach the discipline but also to provide the skills of learning. Without them the child is left on the gallows; they have a mental collar around their necks. They are lost. Look at the drop-outs. No one has taken the time to teach them study skills.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

30% at least. The first quarter, 50%. 30% average.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

Here is the whole thing: with more time, I would tie in more with children's experiences instead of trying to get through the curriculum, which is impossible anyway. Once tied in to concrete experience, then I'd lead students to the abstract level.

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

No, it isn't. My instructor spent most of her time on how reading was taught instead of everything possible for practical applications and strategies for the classroom. Cal Poly Pomona is doing an outstanding job. It shows in their educators during practice teaching.

What suggestions for training do you have?

The skills of successful reading, writing, and study, and the ability to teach them must be part of teacher preparation. One requirement should be that, to maintain your [teaching] license you have to go back and have more courses which capable educators have determined are necessary to keep up in the field. There has to be pressure [to do it]. In my district, the pressure is that you have to get a Master's degree or you're gone.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

Children generally are very receptive to receiving help in how to learn and study. The critical age to teach them is between grades two and five. If we can teach responsibility very young, then they can learn and study when needed in grades six and up. We must reinforce the old-fashioned work ethic.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 12   Subject Area: Science
Grade Level Taught: 7-8   Ability Level Taught: Academic/College Preparatory

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

I would have to say a lack of concentration on content. They have to read it several times in order to get the main ideas. They're not able to get main ideas without bogging down in details.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

I believe in both. I teach subject matter. If you can show kids how to pick out main ideas, concepts, and supporting details, then I'm serving my subject matter. They're not opposing ideas. I teach kids SQ3R.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of studying written material)?

More toward the beginning of the year. Once they get the idea, we don't spend a lot of time on it. About 1%.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

They'd change a great deal. Test-taking skills, different ways of organizing material, ranging from groups to computers--I'd have time to try these things.

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

No, but no education class adequately meets the training needs of teachers. Learning in a class is one thing and what you need [in order] to teach is another.

What suggestions for training do you have?

I've found it interesting to be on textbook committees. I've become more aware of textbook organization; some are much more logical than others. Experiences in comparing textbooks and readability formulas are useful and interesting.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

The college-bound students need it less than lower students, but they still need it. They're brighter but lazier. All students of all levels need study skills.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Maybe.

Interviewee: # 13   Subject Area: Science
Grade Level Taught: 9-10   Ability Level Taught: Academic/College Preparatory

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

They are two years behind on the norm. Even if I use state textbooks, they have difficulty understanding what they read. I usually go over key words first to make sure they're understanding the material. Kids just aren't reading enough on their own time.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

Teaching students how to learn is much more important. One of the first things I do is teaching students how to use the textbook, different parts like the appendix and index.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of studying written material)?

I really have no idea. I try to make class time available for my teaching subject matter. About three nights a week they have homework to read and interpret on their own.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are not required to cover an unreasonable amount of content in the time available (in other words, given more time), how would your instructional practices change?

Subject matter in itself is not important. It's the study habits I'd like to concentrate on in subject matter classes. If kids are really interested--like in the earthquake we just had--I'd take a month if I needed to. If there were processes I felt were important enough, I'd take the time to teach them.

252

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

I've been going back for classes for my own interest. I don't know what college are doing in the way of reading training. From the new teachers in our school--it's unique in that new teachers are running into trouble with ESL classes.

What suggestions for training do you have?

My contention about education is that it has to start before they get to school. It's too late at the high school level to change their study habits or reading habits.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

I basically teach science. One of the most important things I stress is the ability to logically solve problems. I work with student in cooperating and communicating with each other.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 14   Subject Area: Science
Grade Level Taught: 7-8   Ability Level Taught: General/Regular

_____

1. What is your major concern regarding students' capabilities to study textbook or other written material?

Comprehension. Their inability to understand what the author has written, each paragraph, and be able to pick out the main subject.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

Not being one of those teachers, it's hard to say. If subject matter oriented, they've got to be a reading teacher as well because much material is in print. A major role is helping students pick out what is important. It's so voluminous, if students aren't taught what's important, you're going to go crazy. I have that responsibility to pull out those ideas and identify them. Teachers that don't do that and are subject matter oriented just say, "Read this," without telling how. It's folly.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

5%.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

I don't believe our job is to teach subject matter, per se. That time is gone. There is too much material [for it] to be learned. We must teach about sources and where information is found, including computers and data banks. We can't simply put it all in the child's brain. We must also teach children how to identify main ideas, so this means skimming, reading the first and last paragraphs.

I would cover the course curriculum and weave in other skills necessary to learning. This means rejuvenation of test-writing by teachers. I would teach children critical thinking skills--that's the essence of my teaching. But if they don't start using [critical thinking skills] for gathering data and finding information, they won't be able to apply them.

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

Not at all. Most how-to courses were and still are a complete waste of time. The mainstreaming class is baloney. What does the class mean? That has to stop, but there are a lot of other good courses--critical thinking, writing good test questions. Many teachers don't have the opportunity to learn about these things.

What suggestions for training do you have?

For inservice, a valuable part of the mentor program is the opportunity for renewal. Education is a dynamic, changing field. A lot of people--teachers--are unaware of Madeline Hunter, left brain/right brain research, etc. There are wonderful teacher center things going on. Training with teachers doing the training. Teachers need to get out and see and share what each other is doing.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

Teaching study skills has to be a school-based program, with everyone from the principal to the janitor convinced that it is worthwhile. A whole climate is required. We have to get the triad going: school, home, student. Many people are dying to learn how to be better parents. Many parents are willing to hear good people tell them about how their children can be more successful. School climate is the key; one teacher alone can't do it. Everyone has to support it and use it across the board.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 15   Subject Area: Science
Grade Level Taught: 7-9   Ability Level Taught: Heterogeneous

_____

1. What is your major concern regarding students' capabilities to study textbook or other written material?

Reading with understanding. Many of them don't have the faintest idea what they've read. Getting them to read paragraphs and get meaning, to fit them together for an idea.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

Part of what we train students to do is how to learn. I agree with how to learn. Science is what I've been teaching them, but I also work with them on reading and writing. To me, it has to be an overall shot. They need more work on basic skills.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of studying written material)?

That's hard to say. A percentage is hard. It sort of laces through everything. Maybe 50%. I try to work it in for an overall scope of things.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are not required to cover an unreasonable amount of content in the time available (in other words, given more time), how would your instructional practices change?

Basically, allowing more time for writing and discussing. I've backed off the district curriculum this year. I'd just encourage having them state things in their own words, get into cooperative learning. We don't move as fast, but they are understanding the textbook much more.

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

No. My training was basically to determine the reading level of a text and how to pick up on reading problems. It didn't help integrate science with reading and writing.

What suggestions for training do you have?

I've found working with other teachers--recognized for their ability to teach reading and writing, master teachers--to be most practical and useful. Workshops where these teachers are giving ideas that can be taken back to the classroom.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

Getting students to think--they seem to have a real fear of thinking. They can memorize stuff, but they have a paranoia about a problem that doesn't have a set answer. We need to begin teaching them to be problem-solvers in kindergarten.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 16   Subject Area: Social Science
Grade Level Taught: 11-12   Ability Level Taught: General/Regular

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

Comprehension is my number one concern.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

In terms of reading study skills, it's important to concentrate on how to learn when you first start. How to read a textbook, look at the headings, how it's set up, how the book is an important guide to understanding the material. The "what" comes after teaching the basic study skills. It's not just one or the other but the two in tandem.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

20%.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

O.K. Given the new state framework, I might have that situation. I will be able to do more with questions that deal with content and going beyond the textbook. So much of what we do is just cover the textbook. I'm beginning to bring in more materials and spending more quality on content ideas, not just sticking to the text but going beyond it. I've been able to give students more opportunities for writing in response to the material.

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

Having been a fairly young teacher, the main thing I pulled out of it was the structured overview. The other things were time-consuming--like games and puzzles that enhance reading. Some were good, but kids respond just on a rote level. If we had talked about reading as an instructional umbrella, that is more important. Some other good stuff was determining students' reading level. The only thing I really use frequently is the structured overview.

What suggestions for training do you have?

At Liberty, we're doing a workshop on reading in content areas with practical suggestions you can use with your textbook. What would benefit the most in college courses is to have teachers come in and tell what they are doing, drawing upon collegial expertise in the field. That's important--to give and share.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

It's a neglected area, even on my part. It's the most neglected area because we get so worried about content. I find when I have students read and answer questions beforehand, the discussion goes much better. Sometimes we put the cart before the horse; we tell them the destination but not how to get there. We need to teach the process.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 17   Subject Area: Social Science
Grade Level Taught: 7-9   Ability Level Taught: Heterogeneous

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

   I'm trying to teach students how to skim and use it for reference. Some are better at it than others.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

   A big one. I spend just part of each year in study skills activities. If they don't know the process, they won't retain anything. Unless they're aware of how they arrived at answers, they won't be able to do it again. Process is more important than dates.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

   20%.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

   It's never made any difference to me how much content I have to cover. It's a hypothetical situation. I teach at a rate that I think students can follow. I include higher skills for more able students.

260

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

So far, from my student teachers, I'd say they're having better programs at CSU Sacramento and Davis. Everything applies more, though, when you're actually teaching.

What suggestions for training do you have?

Everyone needs a refresher workshop. It must have a component of application. We need to have an exchange among teachers, try it, come back and talk about it. That's the way it sticks. We've been getting updates--stuff I learned long ago but it's nice to be reminded.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

No.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 18   Subject Area: Social Science
Grade Level Taught: 11-12   Ability Level Taught: Heterogeneous classes

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

They have very limited skills. Just finding the main idea--many kids are incapable of it. In our history books, main ideas are highlighted and they still don't get them. For a question, students will find the answer and just copy the next nine words. The majority of kids just cannot do this. If they can't do this, they'll have trouble in all areas.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

I think I have a responsibility to do some of that, but especially in my area I have juniors and seniors and you feel you're cheating the better ones if I don't get content matter across, and for the lower students, if I don't cover those study skills, the content isn't going to do them any good. It's hard to strike a balance. It's something I've struggled with ever since I've been a teacher. I'd like to see every student be required to take a study skills course. Every teacher then could teach subject matter better. I've tried to put something together in study skills for my department. It's hard to get people together. This should start in the lower grades.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

25-30%.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

With the new model curriculum standards, the amount to teach has increased. Even so, I'm moving more toward study skills. I think I would spend even more time on study skills--I wouldn't be concerned where we're at.

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

When I took my reading class in 1972, I got a little bit out of that. I've gotten more out of conferences--that's what's given me ideas that I've gotten excited about. I think you have to be on the job for awhile to be able to see what's needed; then you're more concerned about wanting to improve.

What suggestions for training do you have?

Our district has inservices where they bring people in. We had a good one on study skills. That's a good way to do it--one week, half days. We went out and did some things for it.
Offer unit credit for workshops. The incentive for teachers is to improve their financial situation.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

Just basically what I've said. I'd like to see a state-required course in study skills that students have to pass. All teachers should be involved in a workshop run by the teacher to explain what's going on and how it can be applied to subject area classes. If required for graduation, then there would be some motivation for them.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 19   Subject Area: Social Science
Grade Level Taught: 8   Ability Level Taught: General/Regular

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

Probably their inability to paraphrase--not being able to transcribe it in their own minds, to interpret it for themselves.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

I don't see how you can teach content without teaching word attack and reading skills. Content is secondary to me; I wish it weren't that way, but it's the way it's turned out.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of studying written material)?

25%. I tend to do more of it at the beginning of the year. As the year progresses, I do less there and more on content.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are not required to cover an unreasonable amount of content in the time available (in other words, given more time), how would your instructional practices change?

I'd concentrate on any kind of media instruction, almost anything that deviates from the text. It's one of my big gripes--more emphasis on texts and we're losing kids' motivation.

264

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

The teachers I've seen, yeah. I go to a lot of workshops. It seems more new teachers are concentrating on reading skills. I'd say they're doing a good job.

What suggestions for training do you have?

I think more work needs to be done to get students to want to improve. If a kid can say, "I can get this;" if it's easy enough to understand, they'll be willing to hang in there. More things need to be done that will motivate kids, so they'll read it and understand.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

Pretty much what I've said. More relevant materials for students. In social studies, I can tie in to every day events. Ginn is coming up with a good non-frustrational motivation program. More needs to be done and teachers need to stay abreast of it.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Interviewee: # 20   Subject Area: Social Science
Grade Level Taught: 7-8   Ability Level Taught: Academic/College preparatory

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1. What is your major concern regarding students' capabilities to study textbook or other written material?

I have trouble giving kids reading assignments and their being able to pass written exams. If I give them supplementary explanation, enhance the lesson by giving a lecture, they grasp the concepts much better.

2. Some experts believe secondary school teachers should concentrate on helping students learn how to learn. Others believe teachers need to concentrate on subject matter, or the "what" of learning. In your view, what role do subject matter teachers have in developing students' reading study skills?

Their role is to ensure students understand the material they are reading. I think it's fine to focus on content but we also must make sure they understand what they're doing. So a constant check by the teacher--meaning through daily review, having students read aloud occasionally, check to see if students are understanding--is definitely needed. This way you can see if the difficulty of reading is too high or too low.

3. Approximately what percentage of your instructional time is spent on instructing students in reading study skills (the process of *studying* written material)?

I spend about one-third of my time reinforcing skills learned in elementary school.

4. A preliminary finding of this study is that a major factor that inhibits teaching reading study skills is that teachers have too much content to cover in the given time. Given a hypothetical situation where you are *not* required to cover an unreasonable amount of content in the time available (in other words, given *more time*), how would your instructional practices change?

Good question. Given some guidelines or skills needed, I could give even more time to reading study skills. I would definitely--there would be much more increasing [sic] level of reading. I would have students reading novels concurrently with the period we're studying in history. I'd like to see this done more--it would create more high achievers.

5. Another preliminary finding of this study is that teachers feel additional training would encourage their teaching reading study skills. California requires a reading methods course of academic subject area teachers as a part of their professional preparation. Is the existence of that requirement adequately meeting the training needs of new teachers? Why or why not?

I think so. We're given so few guidelines to follow, a creative teacher will continue to develop their skills as a teacher. It depends on the quality of the individual. My courses were adequate; from there, it depends on the teacher how much effort they continue to make. There's always the need to improve.

What suggestions for training do you have?

I'm concerned about the quality of people coming into teaching. Until we change the image with quality people, we're not going to get any more money.
In terms of inservice, I think teachers need to share ideas and thoughts-- brainstorm in focused conversation. That's more important than workshops. Teachers recognize weak areas--they need to work with each other. We get a lot of theory; people want something they can walk away with.

6. Is there anything else you would like to tell me relevant to teaching study skills to students?

No. In elementary schools, the focus on reading has been excellent in the past ten years. There are strict guidelines of what to teach in content areas; the skills are labeled and it makes the teacher more responsible for what they're teaching. On the secondary level, the labels drop off and we're talking about larger concepts. The kids don't realize they're still in a reading class.

7. Would you be willing to participate in a follow-up study involving actual classroom observation of instructional practices?

Yes.

Appendix I

Frequency Tables for Respondents from the
Content Area of English

Table 19

IMPORTANCE OF READING STUDY SKILLS AS PERCEIVED BY ENGLISH TEACHERS

	Frequency and Percentage of Total							
Skill	Very Little 1	2	3	4	Very Much 5	Total	No Response	Mean
Surveying a textbook chapter	10 11.1	13 14.4	21 23.3	16 17.8	30 33.3	90 97.8	2 2.2	3.48
Predicting content	4 4.5	8 9.0	17 19.1	24 27.0	36 40.4	89 96.7	3 3.3	3.90
Identifying main ideas	0 0.0	0 0.0	5 5.6	14 15.7	70 78.7	89 96.7	3 3.3	4.73
Using textbook organizational devices	7 7.9	10 11.2	15 16.9	25 28.1	32 36.0	89 96.7	3 3.3	3.73
Posing questions from text	2 2.2	3 3.4	17 19.1	27 30.3	40 44.9	89 96.7	3 3.3	4.12
Notektaking from text	5 5.5	5 5.5	25 27.5	29 31.9	27 29.7	91 98.9	1 1.1	3.75
Paraphrasing	2 2.2	4 4.4	17 18.7	27 29.7	41 45.1	91 98.9	1 1.1	4.11
Summarizing	1 1.1	1 1.1	14 15.4	23 25.3	52 57.1	91 98.9	1 1.1	4.36
Outlining	7 7.8	5 5.6	35 38.9	24 26.7	19 21.1	90 97.8	2 2.2	3.48
Constructing diagrammatic representations of text	12 13.5	19 21.3	22 24.7	22 24.7	14 15.7	89 96.7	3 3.3	3.08
Reciting material	15 16.7	20 22.2	28 31.1	15 16.7	12 13.3	90 97.8	2 2.2	2.88
Using a textbook reading/ study strategy	11 12.8	19 22.1	17 19.8	19 22.1	20 23.3	86 93.5	6 6.5	3.21

Table 20

ABILITY LEVEL OF STUDENTS TO PERFORM READING STUDY SKILLS
AS PERCEIVED BY ENGLISH TEACHERS

| | Frequency and Percentage of Total | | | | | | | | |
| | Very Little | | | | Very Much | | Total | No | Mean |
Skill	1	2	3	4	5	?		Response	
Surveying a textbook chapter	8	15	36	14	9	5	87	5	3.01
	9.2	17.2	41.4	18.4	10.3	5.7	94.6	5.4	
Predicting content	2	15	42	19	6	3	87	5	3.14
	2.3	17.2	48.3	21.8	6.9	3.4	94.6	5.4	
Identifying main ideas	2	5	30	34	17	0	88	4	3.67
	2.3	5.7	34.1	38.6	19.3	0.0	95.7	4.4	
Using textbook organizational devices	5	13	29	27	9	5	88	4	3.27
	5.7	14.8	33.0	30.7	10.2	5.7	95.7	4.4	
Posing questions from text	1	14	33	31	6	2	87	5	3.32
	1.1	16.1	37.9	35.6	6.9	2.3	94.6	5.4	
Notetaking from text	11	18	32	20	5	2	88	4	2.88
	12.5	20.5	36.4	22.7	5.7	2.3	95.7	4.4	
Paraphrasing	6	17	39	20	8	0	90	2	3.08
	6.7	18.9	43.3	22.2	8.9	0.0	97.8	2.2	
Summarizing	3	11	28	32	16	0	90	2	3.52
	3.3	12.2	31.1	35.6	17.8	0.0	97.8	2.2	
Outlining	11	18	36	13	7	4	89	3	2.85
	12.4	20.2	40.4	14.6	7.9	4.5	96.7	3.3	
Constructing diagrammatic representations of text	18	16	36	6	5	7	88	4	2.56
	20.5	18.2	40.9	6.8	5.7	8.0	95.7	4.4	
Reciting material	5	21	34	17	3	8	88	4	2.90
	5.7	23.9	27.0	19.3	3.4	9.1	95.7	4.4	
Using a textbook reading/ study strategy	12	11	31	13	5	15	87	5	2.83
	13.8	12.6	35.6	14.9	5.7	17.2	94.6	5.4	

Table 21

ALLOCATION OF INSTRUCTIONAL TIME FOR READING STUDY SKILLS
AS REPORTED BY ENGLISH TEACHERS

Skill	Very Little 1	2	3	4	Very Much 5	Total	No Response	Mean
Surveying a textbook chapter	31	20	19	12	6	88	4	2.34
	35.2	22.7	21.6	13.6	6.8	95.7	4.4	
Predicting content	5	17	30	20	16	88	4	3.28
	5.7	19.3	34.1	22.7	18.2	95.7	4.4	
Identifying main ideas	3	2	15	27	41	88	4	4.15
	3.4	2.3	17.0	30.7	46.6	95.7	4.4	
Using textbook organizational devices	15	16	30	18	9	88	4	2.89
	17.0	18.2	34.1	20.5	10.2	95.7	4.4	
Posing questions from text	2	9	28	23	23	85	7	3.66
	2.4	10.6	32.9	27.1	27.1	92.4	7.6	
Notetaking from text	13	16	29	19	11	88	4	2.99
	14.8	18.2	33.0	21.6	12.5	95.7	4.4	
Paraphrasing	1	16	27	24	21	89	3	3.54
	1.1	18.0	30.3	27.0	23.6	96.7	3.3	
Summarizing	1	6	29	25	28	89	3	3.82
	1.1	6.7	32.6	28.1	31.5	96.7	3.3	
Outlining	16	20	26	17	9	88	4	2.81
	18.2	22.7	29.5	19.3	10.2	95.7	4.4	
Constructing diagrammatic representations of text	23	24	22	10	8	87	5	2.49
	26.4	27.6	25.3	11.5	9.2	94.6	5.4	
Reciting material	27	21	23	10	7	88	4	2.42
	30.7	23.9	26.1	11.4	8.0	95.7	4.4	
Using a textbook reading/ study strategy	26	23	14	14	7	84	8	2.44
	31.0	27.4	16.7	16.7	8.3	92.4	8.7	

Table 22

MEDIUMS OF INSTRUCTION OF COURSE CONTENT
UTILIZED BY ENGLISH TEACHERS

Medium of Instruction	Frequency and Percentage of Total						No	
	0-19%	20-39%	40-59%	60-79%	80-100%	Total	Response*	Mean
TEXTBOOK	16	27	18	2	0	63	31	2.10
	25.4	42.9	28.6	3.2	0.0	67.0		
SUPPLEMENTARY WRITTEN MATERIALS	7	34	17	5	0	63	31	2.32
	11.1	54.0	27.0	7.9	0.0	67.0		
DISCUSSION/ LECTURE/ ORAL EXPLANATION	3	29	24	6	1	63	31	2.57
	4.8	46.0	38.1	9.5	1.6	67.0		

* Figures include those responses with a total exceeding 100 per cent.

Appendix J

Frequency Tables for Respondents from the Content Area of Mathematics

Table 23

IMPORTANCE OF READING STUDY SKILLS AS PERCEIVED BY MATHEMATICS TEACHERS

Skill	Very Little 1	2	3	4	Very Much 5	Total	No Response	Mean
Surveying a textbook chapter	15	13	31	20	14	93	1	3.05
	16.1	14.0	33.3	21.5	15.1	98.9	1.1	
Predicting content	14	14	30	19	14	91	3	3.06
	15.4	15.4	33.0	20.9	15.4	96.8	3.2	
Identifying main ideas	5	2	14	16	53	90	4	4.22
	5.6	2.2	15.6	17.8	58.9	95.7	4.3	
Using textbook organizational devices	7	9	19	30	27	92	2	3.66
	7.6	9.8	20.7	32.6	29.3	97.9	2.1	
Posing questions from text	4	7	17	35	27	90	4	3.82
	4.4	7.8	18.9	38.9	30.0	95.7	4.3	
Notektaking from text	14	19	25	17	17	92	2	3.04
	15.2	20.7	27.2	18.5	18.5	97.9	2.1	
Paraphrasing	11	8	22	23	27	91	3	3.52
	12.1	8.8	24.2	25.3	29.7	96.8	3.2	
Summarizing	7	2	17	23	43	92	2	4.01
	7.6	2.2	18.5	25.0	46.7	97.9	2.1	
Outlining	22	22	15	19	14	92	2	2.79
	23.9	23.9	16.3	20.7	15.2	97.9	2.1	
Constructing diagrammatic representations of text	15	14	17	16	28	90	4	3.31
	16.7	15.6	18.9	17.8	31.1	95.7	4.3	
Reciting material	13	13	24	24	16	90	4	3.19
	14.4	14.4	26.7	26.7	17.8	95.7	4.3	
Using a textbook reading/ study strategy	21	7	28	18	9	83	11	2.84
	25.3	8.4	33.7	21.7	10.8	88.3	11.7	

275

Table 24

ABILITY LEVEL OF STUDENTS TO PERFORM READING STUDY SKILLS AS PERCEIVED BY MATHEMATICS TEACHERS

Skill	Very Little 1	2	3	4	Very Much 5	?	Total	No Response	Mean
Surveying a textbook chapter	19 / 20.7	15 / 16.3	37 / 40.2	8 / 8.7	2 / 2.2	11 / 12.0	92 / 97.9	2 / 2.1	2.49
Predicting content	18 / 20.0	27 / 30.0	23 / 25.6	10 / 11.1	2 / 2.2	10 / 11.1	90 / 95.8	4 / 4.3	2.39
Identifying main ideas	4 / 4.5	10 / 11.2	38 / 42.7	27 / 30.3	7 / 7.9	3 / 3.4	89 / 94.7	5 / 5.3	3.27
Using textbook organizational devices	4 / 4.4	17 / 18.9	34 / 37.8	23 / 25.6	9 / 10.0	3 / 3.3	90 / 95.8	4 / 4.3	3.18
Posing questions from text	7 / 7.9	15 / 16.9	34 / 38.2	22 / 24.7	5 / 5.6	6 / 6.7	89 / 94.7	5 / 5.3	3.04
Notetaking from text	17 / 18.7	21 / 23.1	36 / 39.6	5 / 5.5	0 / 0.0	12 / 13.2	91 / 96.8	3 / 3.2	2.37
Paraphrasing	14 / 15.6	21 / 23.3	31 / 34.4	17 / 18.9	3 / 3.3	4 / 4.4	90 / 95.8	4 / 4.3	2.70
Summarizing	9 / 9.8	15 / 16.3	40 / 43.5	16 / 17.4	8 / 8.7	4 / 4.3	92 / 97.9	2 / 2.1	2.99
Outlining	19 / 21.1	25 / 27.8	23 / 25.6	6 / 6.7	2 / 2.2	15 / 16.7	90 / 95.8	4 / 4.3	2.29
Constructing diagrammatic representations of text	16 / 18.0	17 / 19.1	28 / 31.5	8 / 9.0	4 / 4.5	16 / 18.0	89 / 94.7	5 / 5.3	2.55
Reciting material	3 / 3.4	17 / 19.1	29 / 32.6	22 / 24.7	6 / 6.7	12 / 13.5	89 / 94.7	5 / 5.3	3.14
Using a textbook reading/ study strategy	18 / 21.2	11 / 12.9	21 / 24.7	8 / 9.4	1 / 1.2	26 / 30.6	85 / 90.4	9 / 9.6	2.37

Table 25

ALLOCATION OF INSTRUCTIONAL TIME FOR READING STUDY SKILLS
AS REPORTED BY MATHEMATICS TEACHERS

| Skill | Frequency and Percentage of Total | | | | | | | |
	Very Little 1	2	3	4	Very Much 5	Total	No Response	Mean
Surveying a textbook chapter	39 42.4	18 19.6	26 28.3	6 6.5	3 3.3	92 97.9	2 2.1	2.09
Predicting content	23 25.6	19 21.1	31 34.4	15 16.7	2 2.2	90 95.7	4 4.3	2.49
Identifying main ideas	7 7.9	4 4.5	17 19.1	31 34.8	30 33.7	89 94.7	5 5.3	3.82
Using textbook organizational devices	10 11.1	16 17.8	22 24.4	31 34.4	11 12.2	90 95.7	4 4.3	3.19
Posing questions from text	11 12.4	7 7.9	25 28.1	28 31.5	18 20.2	89 94.7	5 5.3	3.39
Notetaking from text	28 30.8	24 26.4	21 23.1	15 16.5	3 3.3	91 96.9	3 3.2	2.35
Paraphrasing	10 11.0	14 15.4	27 29.7	21 23.1	19 20.9	91 96.9	3 3.2	3.28
Summarizing	7 7.7	8 8.8	24 26.4	22 24.2	30 33.0	91 96.9	3 3.2	3.66
Outlining	45 49.5	14 15.4	23 25.3	5 5.5	4 4.4	91 96.9	3 3.2	2.00
Constructing diagrammatic representations of text	28 31.8	8 9.1	23 26.1	19 21.6	10 11.4	88 93.6	6 6.4	2.72
Reciting material	17 19.1	15 16.9	26 29.2	17 19.1	14 15.7	89 94.7	5 5.3	2.96
Using a textbook reading/ study strategy	35 42.7	16 19.5	20 24.4	8 9.8	3 3.7	82 87.1	12 12.8	2.12

Table 26

MEDIUMS OF INSTRUCTION OF COURSE CONTENT
UTILIZED BY MATHEMATICS TEACHERS

| Medium of Instruction | Frequency and Percentage of Total | | | | | | No | |
	0-19%	20-39%	40-59%	60-79%	80-100%	Total	Response*	Mean
TEXTBOOK	7	23	24	11	2	67	25	2.67
	10.4	34.3	35.8	16.4	3.0	72.8		
SUPPLEMENTARY WRITTEN MATERIALS	39	23	4	1	0	67	25	1.51
	58.2	34.3	6.0	1.5	0.0	72.8		
DISCUSSION/ LECTURE/ ORAL EXPLANATION	7	14	24	18	4	67	25	2.97
	10.4	20.9	35.8	26.9	6.0	72.8		

* Figures include those responses with a total exceeding 100 per cent.

Appendix K

Frequency Tables for Respondents from the
Content Area of Science

Table 27

IMPORTANCE OF READING STUDY SKILLS AS PERCEIVED BY SCIENCE TEACHERS

	Frequency and Percentage of Total							
	Very Little				Very Much	Total	No Response	Mean
Skill	1	2	3	4	5			
Surveying a textbook chapter	3	7	17	26	49	102	1	4.09
	2.9	6.9	16.7	25.5	48.0	99.0	1.0	
Predicting content	4	10	33	31	23	101	2	3.58
	4.0	9.9	32.7	30.7	22.8	98.1	1.9	
Identifying main ideas	1	0	5	15	81	102	1	4.72
	1.0	0.0	4.9	14.7	79.4	99.0	1.0	
Using textbook organizational devices	1	4	15	27	53	100	3	4.27
	1.0	4.0	15.0	27.0	53.0	97.1	2.9	
Posing questions from text	1	6	20	36	36	99	4	4.01
	1.0	6.1	20.2	36.4	36.4	96.1	3.9	
Notektaking from text	13	12	25	21	32	103	0	3.46
	12.6	11.7	24.3	20.4	31.1	100.0	0.0	
Paraphrasing	7	9	33	24	29	102	1	3.58
	6.9	8.8	32.4	23.5	28.4	99.0	1.0	
Summarizing	1	2	23	31	45	102	1	4.15
	1.0	2.0	22.5	30.4	44.1	99.0	1.0	
Outlining	16	13	26	26	22	103	0	3.24
	15.5	12.6	25.2	25.2	21.4	100.0	0.0	
Constructing diagrammatic representations of text	16	6	33	22	23	100	3	3.30
	16.0	6.0	33.0	22.0	23.0	97.1	2.9	
Reciting material	15	25	31	17	14	102	1	2.90
	14.7	24.5	30.4	16.7	13.7	99.0	1.0	
Using a textbook reading/ study strategy	7	8	32	21	22	90	13	3.48
	7.8	8.9	35.6	23.3	24.4	87.4	12.6	

Table 28

ABILITY LEVEL OF STUDENTS TO PERFORM READING STUDY SKILLS
AS PERCEIVED BY SCIENCE TEACHERS

| | Frequency and Percentage of Total | | | | | | | | |
| | Very Little | | | | Very Much | | Total | No Response | Mean |
Skill	1	2	3	4	5	?	Total	Response	Mean
Surveying a textbook chapter	4	15	42	24	10	4	99	4	3.22
	4.0	15.2	42.4	24.2	10.1	4.0	96.1	3.9	
Predicting content	17	21	39	19	2	2	100	3	2.67
	17.0	21.0	39.0	19.0	2.0	2.0	97.1	2.9	
Identifying main ideas	2	13	35	31	19	0	100	3	3.52
	2.0	13.0	35.0	31.0	19.0	0.0	97.1	2.9	
Using textbook organizational devices	3	14	31	37	12	1	98	5	3.43
	3.1	14.3	31.6	37.8	12.2	1.0	95.2	4.9	
Posing questions from text	6	17	32	34	6	1	96	7	3.18
	6.3	17.7	33.3	35.4	6.3	1.0	93.2	6.8	
Notetaking from text	16	21	31	19	8	6	101	2	2.81
	15.8	20.8	30.7	18.8	7.9	5.9	98.1	1.9	
Paraphrasing	14	31	32	19	2	1	99	4	2.63
	14.1	31.3	32.3	19.2	2.0	1.0	96.1	3.9	
Summarizing	7	19	38	26	8	0	98	5	3.09
	7.1	19.4	38.8	26.5	8.2	0.0	95.2	4.9	
Outlining	18	23	27	19	8	6	100	3	2.72
	18.0	23.0	27.0	19.0	7.0	6.0	97.1	2.9	
Constructing diagrammatic representations of text	25	15	30	18	3	8	99	4	2.55
	25.3	15.2	30.3	18.2	3.0	8.1	96.1	3.9	
Reciting material	10	15	36	23	9	6	99	4	3.07
	10.1	15.2	36.4	23.2	9.1	6.1	96.1	3.9	
Using a textbook reading/ study strategy	12	22	30	14	5	7	90	13	2.74
	13.3	24.4	33.3	15.6	5.6	7.8	87.4	12.6	

Table 29

ALLOCATION OF INSTRUCTIONAL TIME FOR READING STUDY SKILLS
AS REPORTED BY SCIENCE TEACHERS

	Frequency and Percentage of Total							
	Very Little				Very Much	Total	No	Mean
Skill	1	2	3	4	5		Response	
Surveying a textbook chapter	16	23	36	21	5	101	2	2.76
	15.8	22.8	35.6	20.8	5.0	98.1	1.9	
Predicting content	18	24	31	22	5	100	3	2.72
	18.0	24.0	31.0	22.0	5.0	97.1	2.9	
Identifying main ideas	3	10	19	32	36	100	3	3.88
	3.0	10.0	19.0	32.0	36.0	97.1	2.9	
Using textbook organizational devices	4	17	34	23	19	97	6	3.37
	4.1	17.5	35.1	23.7	19.6	94.2	5.8	
Posing questions from text	7	18	30	23	19	97	6	3.30
	7.2	18.6	30.9	23.7	19.6	94.2	5.8	
Notetaking from text	29	19	28	13	12	101	2	2.60
	28.7	18.8	27.7	12.9	11.9	98.1	1.9	
Paraphrasing	24	13	29	19	13	98	5	2.84
	24.5	13.3	29.6	19.4	13.3	95.2	4.9	
Summarizing	8	15	24	29	25	101	2	3.48
	7.9	14.9	23.8	28.7	24.8	98.1	1.9	
Outlining	33	20	22	15	10	100	3	2.49
	33.0	20.0	22.0	15.0	10.0	97.1	2.9	
Constructing diagrammatic representations of text	32	8	25	22	12	99	4	2.74
	32.3	8.1	25.3	22.2	12.1	96.1	3.9	
Reciting material	33	17	26	13	9	98	5	2.47
	33.7	17.3	26.5	13.3	9.2	95.2	4.9	
Using a textbook reading/ study strategy	27	14	25	10	13	89	14	2.64
	30.3	15.7	28.1	11.2	14.6	86.4	13.6	

Table 30

MEDIUMS OF INSTRUCTION OF COURSE CONTENT
UTILIZED BY SCIENCE TEACHERS

Medium of Instruction	Frequency and Percentage of Total						No	
	0-19%	20-39%	40-59%	60-79%	80-100%	Total	Response*	Mean
TEXTBOOK	21	35	26	9	0	91	12	2.25
	23.1	38.5	28.6	9.9	0.0	88.4		
SUPPLEMENTARY WRITTEN MATERIALS	29	47	13	1	1	91	12	1.88
	31.9	51.6	14.3	1.1	1.1	88.4		
DISCUSSION/ LECTURE/ ORAL EXPLANATION	3	38	32	16	2	91	12	2.74
	3.3	41.8	35.2	17.6	2.2	88.4		

* Figures include those responses with a total exceeding 100 per cent.

Appendix L

Frequency Tables for Respondents from the
Content Area of Social Science

Table 31

IMPORTANCE OF READING STUDY SKILLS AS PERCEIVED
BY SOCIAL SCIENCE TEACHERS

	Frequency and Percentage of Total							
	Very Little				Very Much	Total	No Response	Mean
Skill	1	2	3	4	5			
Surveying a textbook chapter	0	4	18	28	34	84	1	4.10
	0.0	4.8	21.4	33.3	40.5	98.8	1.2	
Predicting content	1	7	22	31	23	84	1	3.81
	1.2	8.3	26.2	36.9	27.4	98.8	1.2	
Identifying main ideas	0	0	3	10	71	84	1	4.81
	0.0	0.0	3.6	11.9	84.5	98.8	1.2	
Using textbook organizational devices	0	2	18	26	39	85	0	4.20
	0.0	2.4	21.2	30.6	45.9	100.0	0.0	
Posing questions from text	1	2	20	25	35	83	2	4.10
	1.2	2.4	24.1	30.1	42.2	97.7	2.4	
Notektaking from text	3	14	27	24	16	84	1	3.43
	3.6	16.7	32.1	28.6	19.0	98.8	1.2	
Paraphrasing	3	3	29	27	21	83	2	3.72
	3.6	3.6	34.9	32.5	25.3	97.7	2.4	
Summarizing	0	3	13	31	37	84	1	4.21
	0.0	3.6	15.5	36.9	44.0	98.8	1.2	
Outlining	10	8	20	21	24	83	2	3.49
	12.0	9.6	24.1	25.3	28.9	97.7	2.4	
Constructing diagrammatic representations of text	9	17	21	15	21	83	2	3.27
	10.8	20.5	25.3	18.1	25.3	97.7	2.4	
Reciting material	19	21	19	11	8	78	7	2.59
	24.4	26.9	24.4	14.1	10.3	91.8	8.2	
Using a textbook reading/ study strategy	5	12	22	22	14	75	10	3.37
	6.7	16.0	29.3	29.3	18.7	88.2	11.8	

Table 32

ABILITY LEVEL OF STUDENTS TO PERFORM READING STUDY SKILLS
AS PERCEIVED BY TEACHERS OF SOCIAL SCIENCE

| Skill | Frequency and Percentage of Total | | | | | | | | |
| | Very Little | | | | Very Much | | Total | No Response | Mean |
	1	2	3	4	5	?			
Surveying a textbook chapter	2	12	26	30	9	3	82	3	3.41
	2.4	14.6	31.7	36.6	11.0	3.7	96.5	3.5	
Predicting content	4	18	35	19	6	1	83	2	3.06
	4.8	21.7	42.2	22.9	7.2	1.2	97.7	2.4	
Identifying main ideas	1	5	20	39	17	1	83	2	3.81
	1.2	6.0	24.1	47.0	20.5	1.2	97.7	2.4	
Using textbook organizational devices	1	5	29	31	13	4	83	2	3.63
	1.2	6.0	34.9	37.3	15.7	4.8	97.7	2.4	
Posing questions from text	1	14	26	29	10	2	82	3	3.41
	1.2	17.1	31.7	35.4	12.2	2.4	96.5	3.5	
Notetaking from text	5	15	33	20	10	2	85	0	3.18
	5.9	17.6	38.8	23.5	11.8	2.4	100.0	0.0	
Paraphrasing	5	14	34	19	7	4	83	2	3.11
	6.0	16.9	41.0	22.9	8.4	4.3	97.7	2.4	
Summarizing	2	7	34	31	8	2	84	1	3.44
	2.4	8.3	40.5	36.9	9.5	2.4	98.8	1.2	
Outlining	8	19	26	19	8	1	81	4	3.00
	9.9	23.5	32.1	23.5	9.9	1.2	95.3	4.7	
Constructing diagrammatic representations of text	12	19	28	12	5	7	83	2	2.72
	14.5	22.9	33.7	14.5	6.0	8.4	97.7	2.4	
Reciting material	7	9	27	22	10	4	79	6	3.25
	8.9	11.4	34.2	27.3	12.7	5.1	92.9	7.1	
Using a textbook reading/ study strategy	5	14	23	22	6	10	80	5	3.14
	6.3	17.5	28.8	27.5	7.5	12.5	94.1	5.9	

Table 33

ALLOCATION OF INSTRUCTIONAL TIME FOR READING STUDY SKILLS
AS REPORTED BY SOCIAL SCIENCE TEACHERS

| | Frequency and Percentage of Total | | | | | | | |
| | Very Little | | | | Very Much | Total | No Response | Mean |
Skill	1	2	3	4	5			
Surveying a textbook chapter	7	19	28	18	10	82	3	3.06
	8.5	23.2	34.1	22.0	12.2	96.5	3.5	
Predicting content	4	16	36	17	9	82	3	3.13
	4.9	19.5	43.9	20.7	11.0	96.5	3.5	
Identifying main ideas	1	4	14	27	39	85	0	4.17
	1.2	4.7	16.5	31.8	45.9	100.0	0.0	
Using textbook organizational devices	4	11	24	25	19	83	2	3.53
	4.8	13.3	28.9	30.1	22.9	97.7	2.4	
Posing questions from text	4	12	18	26	21	81	4	3.59
	4.9	14.8	22.2	32.1	25.9	95.3	4.7	
Notetaking from text	7	27	20	20	10	84	1	2.99
	8.3	32.1	23.8	23.8	11.9	98.8	1.2	
Paraphrasing	5	17	26	21	12	81	4	3.22
	6.2	21.0	32.1	25.9	14.8	95.3	4.7	
Summarizing	2	6	24	30	21	83	2	3.75
	2.4	7.2	28.9	36.1	25.3	97.7	2.4	
Outlining	12	20	25	13	12	82	3	2.92
	14.6	24.4	30.5	15.9	14.6	96.5	3.5	
Constructing diagrammatic representations of text	17	21	19	12	13	82	3	2.79
	20.7	25.6	23.2	14.6	15.9	96.5	3.5	
Reciting material	23	22	15	9	9	78	7	2.47
	29.5	28.2	19.2	11.5	11.5	91.8	8.2	
Using a textbook reading/ study strategy	15	14	21	17	8	75	10	2.85
	20.0	18.7	28.0	22.7	10.7	88.2	11.8	

Table 34
MEDIUMS OF INSTRUCTION OF COURSE CONTENT
UTILIZED BY SOCIAL SCIENCE TEACHERS

| Medium of Instruction | Frequency and Percentage of Total | | | | | | No | |
	0-19%	20-39%	40-59%	60-79%	80-100%	Total	Response*	Mean
TEXTBOOK	5	22	25	8	2	62	23	2.68
	8.1	35.5	40.3	12.9	3.2	72.9		
SUPPLEMENTARY WRITTEN MATERIALS	30	26	5	1	0	62	23	1.63
	48.4	41.9	8.1	1.6	0.0	72.9		
DISCUSSION/ LECTURE/ ORAL EXPLANATION	5	25	27	5	0	62	23	2.52
	8.1	40.3	43.5	8.1	0.0	72.9		

* Figures include those responses with a total exceeding 100 per cent.

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