

THE EFFECTS OF SUMMARIZATION TRAINING
ON COMMUNITY COLLEGE DEVELOPMENTAL ENGLISH STUDENTS

by

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(ABSTRACT)

The primary purpose of this study was to investigate the effects of a training program in summarizing textbook articles on developmental English community college students' ability to summarize text. Although previous research has documented improvement in reading recall when subjects were taught a hierarchical summary procedure, the study constitutes the first attempt to test whether this procedure can be used to train students to write better summaries. Developmental English students were chosen for study because students in this population typically do poorly at this important academic task. Because summary notes are often considered an aid to recall, the study also measured recall protocols of students who were trained in summary writing in contrast to those who received alternative training. Experimental group students were taught to identify the top three levels of importance and had guided practice with feedback once a week for five weeks. Control group students were given training in vocabulary and comprehension techniques. Passages were at least 1200 words. Scoring was based on inclusion of information from the top three levels of hierarchical structure in each passage.

The basic questions of the study were: (1) Is there an interaction between group status and cognitive abilities on summary writing posttest scores? (2) Are students who received training in summarization more proficient at summarizing text than students who received another type of training? (3) Are students who received training in summarization more proficient at recalling text than students who received another type of training? (4) Do students trained in summarization score higher than students trained with other methods on a standardized reading test?

Regression analyses indicated the following results:

(1) There was no interaction between type of training and cognitive abilities on summary writing posttest scores; high and low students profited equally from instruction. (2) Students trained in summarization performed significantly higher than control group students on the summary writing posttest. (3) Treatment group students did not score significantly higher than control group students on the delayed recall test, but there was a trend towards significance. (4) There was no significant difference between treatment and control group students' standardized reading test scores.

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TABLE OF CONTENTS

CHAPTER 1

Discussion of the Problem

Introduction	1
Statement of The Problem	4
Background	6
Need For The Study	9
Assumptions	13
Purposes	14
Research Questions	15
Definition of Terms	15
Delimitations	18
Limitations	18
Organization of the Report	20

CHAPTER 2

Review of Literature

Introduction	21
Historical Background	22
Rules for Constructing Summaries	26
Relationship Between Discourse Structure And Recall	30
Effects of Top-Level Organizational Patterns on Recall	39

Developmental Studies of Summarization	
Proficiency	47
Rating Summaries	59
Methods of Instruction - Impact on Recall	66
Methods of Instruction - Impact on Summary Writing	
Ability	75
Summary of Chapter Two	86

CHAPTER 3

Method

Introduction	93
Subjects	94
Materials	95
Instrumentation	99
Pretraining Procedures	102
Method of Analysis	116

Chapter 4

Results

Introduction	120
Group Means and Standard Deviations for Dependent	
Measures	122
Hypothesis One	124
Hypothesis Two	126
Analysis of Scores	129

Hypothesis Three	131
Hypothesis four	135
Chapter 5	
Summary and Conclusions	
Restatement of Purpose	136
Significance of the Study	137
Summary of Procedures	138
Summary of the Analysis	140
Summary of Findings	141
Discussion	143
Relationship to Previous Research.	146
Implications for Education	152
Further Research Suggested by The Present Study	156
Further Research Suggested by the Literature . .	162
References	166
APPENDIX A	178
APPENDIX B	191
APPENDIX C	229
VITA.	238

CHAPTER 1

Discussion of the Problem

Introduction

The purpose of this study is to establish the value of training community college developmental English students to write summaries of articles taken from college texts. For the purposes of this study, developmental English students are defined as students whose primary language is English. A few students who have learned English as a second language appeared in the classes that were used for training, but they were eliminated from this study unless their English proficiency was equivalent to that of the typical native-speaker developmental student.

There is a practical reason for establishing the value of this training. Community college students are frequently asked to summarize lengthy passages as part of a variety of tasks. For instance, in college composition classes they are often asked to produce at least one documented paper. One of the most important skills needed for this assignment is the ability to summarize articles that typically are over 1,000 words. Students in other college courses are also called upon to use summarization skills. Often they must write a documented paper as part of required course work. Also, both in-class and take-home essay examinations require students to be able to summarize parts of their textbooks. Furthermore,

summarization can often be an aid in preparing for in-class examinations that test recall of material covered during the semester.

Research tells us that community college students frequently do poorly when it comes to summarizing text. This is true even of students of average ability, and it is especially true of students who are not permitted to enter college composition classes because they lack the prerequisite skills. Students lacking skills needed for college composition are often called "underprepared" or "developmental" in the literature. Research indicates that when compared to prepared students, developmental students tend to leave out macro-ideas and generalizations when they write summaries (Day, 1980; Johns, 1985). This suggests that developmental students need help in becoming aware of the hierarchical structure of text and its relationship to summary writing.

The present study addresses several issues not addressed in the literature. First, research has not demonstrated that developmental students can be trained to summarize text adequately, regardless of its length or the training method employed. Second, research does not address the issue of whether the summarization rule approach prescribed by Day and others can successfully teach students in any population to summarize text longer than 500 words. Third, it is also not

known whether training in understanding discourse structure can improve developmental students recall of text.

The only studies that directly measure the ability of students to summarize text, as opposed to recalling text after summarization training, use text of about 500 words in length. These studies use the summarization rule approach based on the task analysis described by Brown and Day (1980; 1983). The summarization rule approach directs students to locate or invent a topic sentence for each paragraph in a selection and to combine idea-units within paragraphs.

On the other hand, a hierarchical approach would teach students to look at text which contains more levels of importance than text used for previous summarization studies. Students would look at an entire text using the subheadings and the introduction to the article as guides to get a sense of the overall structure of the text. Students would then write sentences which include the macropropositions of the article. Once these are established, they would then write a sentence for each topic heading in the article, stating the most general idea in that section. They would then include propositions at the third level of importance, but they would not include propositions any lower in the content structure of the text unless absolutely necessary to clarify a previous idea. This hierarchical approach might prove a more practical way for students to approach summarizing longer texts.

Although this study attempts to help solve the practical problem of teaching developmental students to write better summaries, it addresses the following theoretical issues: First, do students in this population already use hierarchical structure when they summarize text? Second, can they be trained to do so if they are not already proficient at using this strategy for writing summaries? Third, what are the factors that determine the success of such training?

Statement of The Problem

Community college developmental reading programs are designed to prepare students for occupational/technical and college transfer programs. These reading programs attempt to help students increase their grade levels in reading by several years in a relatively short amount of time. Many adult students are hesitant to spend more than one semester working on the improvement of these skills even though they are attempting to make up for educational deficiencies that place them several grade levels below the college freshman level. The reason for this impatience seems to be that many developmental students have the responsibilities typical of most adults. It is a burden for them to take time out from earning a living and raising children to enter college programs. When they are informed that they must spend additional time preparing for this work, they must weigh hard realities against lofty dreams. Younger developmental

students just out of high school often feel that if they must spend too much time preparing for regular college courses, they must not be college material. The situation confronting the community college reading specialist is how to help students achieve competency in a limited amount of time. If students do not perceive rapid growth in reading, they are apt to leave these programs.

Teaching students how to summarize text has some immediate positive payoffs. Perhaps the most important aspect of this is the fact that it is a prerequisite skill for writing research papers and other writing assignments required by college instructors. However, by learning to write summaries, students may learn several things about reading and writing at the same time. One valuable skill that students can learn is that text generally has some kind of structure and that understanding that structure is an aid to comprehension and recall. Another thing they can learn is that text structure consists of many levels, and it is often unnecessary to go down too many levels to get the important ideas from a piece of writing. Third, students can develop self-monitoring skills, for in order to summarize they must have some understanding of what has been read. Fourth, students can learn that the act of organizing something that has been read as part of a writing task can be an aid to retention and recall.

Since summarization is an important skill, it is important to examine methods of instruction that teach students how to summarize. It is also of interest to determine what impact training in summarization has on delayed recall of textual information for students in this population. Finally, it is of interest to determine whether training in summarization has any impact on general reading skills as measured by a standardized reading test. The problem is to assess the effects of training on community college students' ability to summarize and recall text.

Background

This study is grounded in the branch of schema theory that emphasizes knowledge of text structure as an aid for comprehension and recall. According to this theory, an understanding of text structure enhances comprehension and recall because the reader is able to form a cognitive framework (a schema) based on previous experience with prose structure. This structural schema resembles an outline or template of key idea features which is brought to the comprehension task (Rumelhart & Ortony, 1977). Bartlett (1932) postulated that a schema of text structure allows a reader to remember whole texts. Details of this underlying organization were then specified by Rumelhart (1975) and Kintsch and van Dijk (1978). Researchers have since developed elaborate systems for representing top-level schema and the

underlying structure of expository prose (Frederiksen, 1975; Kintsch, 1975; Meyer, 1975, 1977a, 1977b; Meyer & McConkie, 1973).

Summary writing as a valuable avenue of instruction is also based on the paradigm that reading and writing are transactive in nature. This perspective describes reading and writing processes as the composing of meaning (Sternglass, 1986). Reading and writing work together as tools for information storage and retrieval, thought processing, discovery, communication and self-indulgence. Because these processes interface, many researchers have written about different "convergences" where reading and writing occur (Petersen, 1986). Writing summaries is likely to be one of these convergences where reading and writing come together for purposes of information processing, storage and retrieval.

In addition to the above, the study presented here is an outgrowth of specific studies that suggest one payoff of an understanding of text structure is likely to be increased recall and retention of textual information. Although these studies do not focus on summary writing per se, they suggest that those who are rated high in reading comprehension are aware of the structure of text and use it as a guide for recall (Meyer, 1980, 1982a; Meyer, Brandt & Bluth, 1980). Also, studies have indicated that instruction in awareness of top-level structure improves students' recall of text

(Armbruster, Anderson & Ostertag, 1986; Bartlett, 1978; Meyer, 1981; Meyer, Young & Bartlett, 1989; Slater & Graves, 1986; Taylor, 1982; Taylor & Beach, 1984). The above studies, however, neither include developmental students nor address the issue of whether or not these students can be trained to write better summaries.

Finally, this study is grounded in developmental studies of summarization proficiency. Because writing summaries is a skill often required in academic settings and because it is possible that summarization may help improve other aspects of literacy, researchers have investigated what students at various age levels are able to accomplish. These studies indicate that students at various age levels, including prepared and developmental college students, are seldom able to write adequate summaries without training (Brown & Day, 1983; Brown, Campione & Day, 1981; Day, 1980; Garner, Belcher, Winfield & Smith, 1985; Garner & McCaleb, 1985; Hare & Borchardt, 1984; Johns, 1985; Winograd, 1984).

Training studies seem to indicate that explicit instruction in summarizing short prose selections using a summarization rule approach yields improvement at various developmental levels (Day, 1980; Hare & Borchardt, 1984). It could be that this strategy is useful for short pieces but breaks down for larger amounts of text. Furthermore, previous studies have indicated that even after training of this

nature, students still had not written adequate summaries. In addition to this, the one summary writing training study involving developmental students indicated that after training students could not write satisfactory summaries (Day, 1980). It would be useful to determine whether students in the developmental education population can profit from a hierarchical, top-down approach to writing summaries that approximate the length of typical assignments.

Need For The Study

The ability to write summaries is a useful skill in academic settings if for no other reason than that it is required by many instructors. Summary writing is a prerequisite skill for writing research papers which all students must do if they are to obtain an Associate or Bachelor of Arts degree. Moreover, several payoffs in terms of better comprehension and recall of text have been shown to result from certain activities involving summarization. It has even been demonstrated that the writing of university freshmen, when measured by holistic scoring methods, has improved with top-down summarization training (Slater & Graves, 1986). What has not been demonstrated is whether or not a hierarchical, top-down approach to teaching summary writing would help students in any population write better summaries. It has also not been demonstrated that community college developmental English students can profit from top-

down, hierarchical instruction as a summarization procedure.

This study will address the issue of teaching developmental students to write better summaries. Although few summarization studies have been performed with community college developmental students as the target population, it is clear that they are in need of this type of training. Johns' 1985 study explored the summarization abilities of underprepared four-year college students. Although there could be considerable differences between underprepared college and underprepared junior college students, it is likely that community college developmental students function at the same or lower levels. Johns' study demonstrated that underprepared students were in need of summarization training, but it did not attempt to train them to write better summaries.

The only study which assessed pretraining summarization skills of community college developmental students is Day's 1980 study which also measured whether more or less explicit instruction had the greatest success in teaching summarization of 500-word text written at the 5th and 6th-grade levels to prepared and underprepared junior college students. She found that prior to training, developmental students performed most summarization tasks at or below the 5th-grade level. Even after training, developmental students performed the selection rule at about the 10th-grade level and the invention rule at

a level worse than that of average 5th graders.

This study suggests that prior to training, developmental students are not likely to perform well when attempting to summarize the kind of text used for the present study. The text used for the present study is 1225-1425 words written at the 9th and 10th-grade levels. Thus in the present study, the researcher is attempting to train students to summarize more difficult text by using a different training method.

Research leaves unclear whether or not a hierarchical, top-down approach to teaching summarization of text greater than 500 words is something from which community college developmental students can profit for several reasons. First, although there are previous studies that trained students to summarize text greater than 500 words using a top-down, hierarchical approach, they did not measure the ability of students to write summaries. Instead, they measured the ability of students to recall information from the original text when they did not have access to that text after they completed a summarization task. Although previous studies of the effects of summarization training on recall suggest that this type of training improves recall, previous studies do not include developmental students as the target population. Whether or not developmental students demonstrate improved recall of text as a result of summarization training is a secondary consideration of the present study.

Second, there are no studies, regardless of instructional approach or length of text, that successfully teach developmental students to write adequate summaries. The one study (Day, 1980) which measured the effects of training developmental students to write summaries indicated that after two hours of individualized instruction, developmental students still could not write adequate summaries even though the original text was only about 500 words. Day did not use a top-down approach when teaching students to write better summaries. In contrast to a top-down approach, her training method directed students to summarize text by looking at low importance-level information before attending to higher levels of textual information. It is possible that even with 500-word text, developmental students failed to write adequate summaries due to this approach.

Third, researchers have not demonstrated that entire classes of developmental students can be trained to write adequate summaries even when text is about 500 words in length. The developmental students trained by Day still had not attained summarization proficiency after they were given two hours of individualized instruction. In contrast, the present study measures the effects of five hours of group instruction over a five week period of time. It is possible that Day's lack of success in training students to write satisfactory summaries occurred because students did not

receive an adequate amount of instruction.

Furthermore, it is possible that the summarization rule approach used by Day and others might not work as a summarization method for any population of students when text is greater than 500 words since summarization rule studies used text of approximately 500 words. While this has proven feasible for short passages, it may not work for longer selections due to the fact that short texts typically have fewer levels of ideas than longer text. In contrast, a hierarchical approach might prove a more practical way for students to approach summarizing longer texts.

A final aspect of this study not addressed in other studies is the treatment-trait analysis that may add to an understanding of how the various subgroups in the developmental student population profit from instruction of this nature. This will provide a factual basis for recommendations about costs and benefits related to instruction. Specifically, this analysis will determine whether students of high cognitive abilities profit in the same way from the training program in summarization as students of lower abilities.

Assumptions

1. It is assumed that prior to training, developmental English students are not able to summarize adequately the type of text under consideration because they will not be

aware of the hierarchical nature of textbook prose.

2. It is assumed that after some training, developmental English students will be able to invent or locate sentences that will state the macro-level, mid-level and third importance-level propositions of the articles they are asked to summarize.
3. It is assumed that the articles chosen for this experiment can be understood by the experimental population with some minor assistance from the researcher.
4. It is assumed that the writing abilities of the experimental population, though not optimal, are adequate for the purposes of this experiment.
5. It is assumed that the Culture Fair Intelligence Test is adequate for measuring cognitive abilities in this population.
6. It is assumed that The Diagnostic Reading Test is adequate for measuring comprehension and immediate recall of text.

Purposes

The general purpose of this study is to establish the value of training in writing summaries for community college developmental English students. In order to do this it was necessary to:

1. Develop a five week training program that taught

students to summarize articles taken from college texts.

2. Assess students' ability to summarize before, during and after training.
3. Assess students' recall ability after training.
4. Assess students' reading ability after training.
5. Assess students' relatively nonverbal cognitive abilities.

Research Questions

1. Is there an interaction between group status and cognitive abilities on summary writing posttest scores?
2. Are students who received training in summarization more proficient at summarizing text than students who received another type of training?
3. Are students who received training in summarization more proficient at recalling text than students who received another type of training?
4. Do students trained in summarization score higher than students who received another type of training on a standardized reading test?

Definition of Terms

1. A summary is defined as a "statement or account containing or comprising the chief points or the sum and substance of a matter" (Simpson & Weiner, 1989, p. 170). The significant feature of a summary is the reduction of

a specified amount of text while the key points are retained (Stotsky, 1982).

2. A precis is defined as "a concise or abridged statement; a summary; an abstract" (Simpson & Weiner, 1989, p. 320). Some of the studies cited in Chapter 2 of this report use the term precis in place of the term summary.
3. Delayed recall of text is operationally defined as a score on a researcher-devised test one week after reading and summarizing an article.
4. Developmental reading students are viewed as those students who are enrolled in reading courses offered to prepare them for admission to college transfer and occupational/technical programs (Northern Virginia Community College Catalogue, 1987-1988). However, the population in this study does not include those who place in the lowest level of the developmental program. A further description of these students is contained in Chapter 3.
5. Cognitive abilities are operationally defined as a score on the Culture Fair Intelligence Test. This is a group administered standardized test of cognitive abilities which attempts to reduce the effects of verbal abilities, cultural knowledge or educational level. It does this by requiring that examinees be able to perceive relationships among shapes and figures.

6. A standardized reading test is a group-administered, timed test "based upon the responses of a large number of pupils of specified ages and grade levels so that the pupils' achievement may be compared to that of typical pupils at various levels. These tests supply manuals which typically indicate the reliability and validity of the test (De Boer, 1960).
7. A summary script or model summary is defined as a summary of a larger text which includes the top-level structure of that text, the mid-level propositions that describe the topic headings of each section of text and the third level-of- importance propositions of a text as agreed upon by the researcher and two reading specialists.
8. A proposition is defined as a verbal unit that "expresses a state or action and the entities involved in that state or action" (Weaver, 1979, p. 7). Propositions were divided into idea units for posttest scoring purposes. Appendix C provides summary scripts and the summary writing posttest scoring key.
9. Idea units are defined as meaningful units from a passage that can be represented by a word, definition, phrase or sentence (Meyer, 1975, p. 4).
10. Macro-level or top-level structure is viewed as the overall structure of an entire text (Kintsch, 1975; Meyer, 1977b).

11. A mid-level proposition for the purposes of this study is viewed as a statement about a major topic in a text.

Delimitations

1. The population of this study includes only students who were enrolled in upper level developmental reading classes at Northern Virginia Community College, Alexandria Campus during the semester the study was conducted.
2. The study is limited to students who completed all training sessions as described in Chapter Three.
3. The data used for this study is limited to students whose primary language is English or whose proficiency is equivalent to the typical, native speaker developmental English student.

Limitations

The design of this study is a Randomized Control-Group Posttest Only Design (Isaac and Michael, 1981). Because the students were randomly assigned from intact classes, it is possible that they shared information with each other. This could possibly confound the results of the study. However, in this researcher's experience, developmental students do not typically engage in this type of activity. Since students were not in the class or reading laboratory together at the same time, it was not likely that much sharing occurred.

Another possible confounding variable is the fact that students were enrolled in writing classes at the same time

that they were enrolled in their reading classes. In writing classes, students were taught to understand how to use prose structure when writing essays. On the other hand, writing instruction concentrated on helping students develop schemata for organizing their own ideas while training in the present study focused on assisting students in understanding the structure of prose they were required to read. It would have been unethical to withhold this kind of instruction from students even if cooperation from other English teachers could have been obtained. Instructors tend to start off the semester with this instruction so it would have been difficult to change the timing of this instruction to eliminate it as a problem. The training program was started several weeks after the beginning of the term in order to allow students time for course adjustment and to become accustomed to class requirements such as regular attendance. If the summary writing training occurred at the end of the semester when training for English class was almost complete, it would have left little room for growth during training.

Because the length of the essays that students wrote were about 250 words and the articles they summarized were approximately 1300 words, and because student-generated essays for English class did not have topic headings, it is hoped that instruction in how to use structure to write essays did not unduly contaminate the results of this study. Perhaps a

more compelling reason for doubting a great effect of writing instruction upon reading comprehension is the developmental instructor's frequent complaint of students' lack of transfer of skills from one class to another.

Because both control and experimental group students had training in writing, differences in the results of summarization training should be attributed to the treatment. However, lack of differences might be attributed to the common training in writing. Since it is typical in many colleges for students to be enrolled in both reading and writing classes, the fact that students also took a writing class aids in generalization of results.

Organization of the Report

Chapter Two contains a review of the literature related to students' ability to summarize and the effects of summary writing on recall and comprehension.

The instrumentation and research design are discussed in Chapter Three. This includes a description of The Diagnostic Reading Test, The Culture Fair Intelligence Test, the training procedure and the rating scale for student summaries.

The presentation and analysis of the data are included in Chapter Four.

Chapter Five presents conclusions of the study, recommendations for implementation and recommendations for additional study.

CHAPTER 2

Review of Literature

Introduction

This review of literature deals with summary writing in general and specifically with summary writing training and its relationship to recall and reproduction of text.

Following a historical introduction, rules for constructing summaries will be first discussed. The remaining sections of the review will describe the use of structure as it relates to recall of text, the ability of students to write summaries at various grade levels, methods of rating summaries and the effectiveness of summary writing training programs on the ability to recall text or write summaries.

This review will illustrate that there is evidence in the literature that developmental English students are in need of summary writing training. It will also show that there is a need to test a top-down, hierarchical approach for training developmental students to summarize text of over 1,000 words.

The review focuses mainly on published journal literature dating from 1973 to the present. ERIC documents, technical reports, professional journals and the resources of Dissertation Abstracts were the primary resources used for preparing this review.

Historical Background

There is an emerging body of literature discussing the summary and its relationship to reading comprehension and recall. Many authors use the term "precis" derived from French as a synonym. The French term "literally means a cut down statement. ...It is an abstract or summary, ... merely the essence--the pith of a paragraph, or of several paragraphs, or even of a whole essay" (Hood, 1967, p. 1). Shugarman and Hurst (1986) note that a summary is used for "highlighting major points in longer passages" (p. 397). Therefore, the significant feature of the precis or summary is the reduction of a specified amount (Stotsky, 1982). Newmark (1974) says the word limit may be about one-third the number in the original, or it may be much less, or even one sentence.

While there is general agreement that summaries are always less than the original text, most authors do not specify how much less than the original text a summary should be. They may specify a certain word limit for purposes of forcing students to select only part of a text when writing a summary, but they tend to talk about the levels of ideas (top-level, topic sentence or propositional) that should be included in or deleted from a summary rather than the relationship of the number of words in the summary to the number of words in the original. Some authors tend to write about rules of summarization which imply reducing the length

of the original text by an unspecified amount.

The interest in summarizing among researchers is due at least in part to the fact that it is a practical skill that is useful in academic settings. Day (1980) mentions three reasons for this. First, "a good summary is evidence that a message has been understood" (p. 1). Second, "identifying and integrating main ideas are general comprehension skills that are required for effective study" (p. 1). Third, summarizing, which bears a relationship to two other concise representations of text, outlining and mapping, provides feedback to the reader. This feedback serves to inform the reader that the material has been understood (Day, 1980). This usefulness had been acknowledged by British schools, most of which used summary writing twice a week in the equivalent of our grades three to nine (Squire & Applebee, 1969). This instruction has helped British students focus on analyzing, composing and comprehending both expository and narrative passages (Squire, 1983).

The relationship between reading comprehension and summarization is associated with schema theory's contributions to an understanding of reading comprehension (Day, 1980). Studies of schema theory have emphasized one of two kinds of knowledge that relate to comprehension and recall of text: general prior content knowledge or knowledge of text structure. Schema theory emphasizing content postulates that

readers' organized knowledge about some aspect of the world (schemata) provides a basis for comprehending and learning (Anderson, Spiro & Anderson, 1978). The reader uses this prior knowledge as a framework to help interpret and remember information from text. Thus, in order to comprehend, the reader constructs or activates a specific schema that explains what is described in text. The comprehension process consists of the reader's searching for a schema to account for textual information. The reader constructs an incomplete model of the text's meaning which becomes a framework for additional comprehension as he or she continues to focus and refine meaning. Thus, comprehension is viewed as the construction of meaning that occurs as the reader updates knowledge by modifying existing schemata and constructing new ones (Anderson, Spiro & Montague, 1977). From this point of view, meaning is constructed at both the macro-structure level and the micro-structure level. The macro-structure is the overall structure of an entire text (Kintsch, 1975; Meyer, 1977a, 1977b). The micro-structure includes the ideas found in the propositions in a text as well as the relationships between them (Kintsch, 1975).

In addition to content schemata, readers need expectations about a general type of text, regardless of specific content. Awareness of text structure, according to this theory, should enhance comprehension (Geva, 1981;

Pearson, 1982). This occurs because the idea structure of text is more or less well signaled by the surface text structure. Schemata for text structure are viewed as cognitive frameworks resembling an outline which people bring to a comprehension task (Rumelhart & Ortony, 1977). This type of schema is more abstract and general than schemata for content (i.e. for such things as a restaurant). For instance, if a reader brings a problem/solution schema to a text, he or she will be looking for content to fill in for the variables of a problem with its description, antecedents, and consequences and a solution with attributes that will obstruct at least one of the causes of the problem (Meyer, 1981). Meyer and others have identified several types of top-level schemata used in classroom text of an expository nature (Meyer & Rice, 1980; Meyer & Freedle, 1984). They are described later in this report.

Summarization helps readers identify the structure of a piece of writing by forcing them to identify the macrostructure and certain levels of the microstructure of a text in order to eliminate the lowest levels of details. Summarization also prompts readers to reproduce these higher levels of text, which is what schema theorists say readers must do mentally in order to comprehend. According to structural schema theorists, readers must "identify main points in the text in order to construct meaning from what

they already know about the topic and from the ideas presented in the text" (Taylor, 1984, p. 11). In order to write summaries, readers must also identify main points in the text and attend to the relationships among the ideas that are presented in a text. Therefore, the writing of summaries is likely to enhance the model building aspect of comprehension.

Rules for Constructing Summaries

Kintsch and van Dijk's (1978) model of text comprehension and production is a description rather than a prescription of what a reader must do mentally in order to process information. The model describes the reader applying the rules of deletion, generalization and construction to the microstructure of a text to form a mental gist (a macrostructure) of the important information in a text. The complementary rules of addition, specification and particularization are then used to produce a written recall of the text.

Kintsch and van Dijk (1978) specify four summarization rules: (1) deletion - delete propositions that denote an accidental property of the discourse, (2) generalization - substitute an immediate super-concept for a sequence of micropropositions, (3) selection - normal conditions, components and consequences may be deleted if they are denoted by another proposition, and (4) construction - substitute a single proposition that denotes normal conditions, components,

or consequences for a sequence of propositions that make them explicit.

Meyer (1977a) states that a summary of a passage is similar to what Kintsch and van Dijk envision as a macro-structure. Macro-structures relate to micro-structures through rules of deletion and subordination. The nonessential information and repetitive information of micro-structures are not included in the macrostructure. Macro-structures also include generalizations and superordinate ideas which subsume information found in the micro-structure. These generalizations and superordinates are not considered part of the micro-structure.

Brown and Day (1980) derived their rules for summarizing text from those of Kintsch and van Dijk. They state that their rules differ from Kintsch and van Dijk in two ways which reflect their different interests. According to Brown and Day, Kintsch and van Dijk wanted to describe the mental representation formed by story readers. Therefore, Kintsch and van Dijk's rules are descriptive and deal with narrative structures. Brown and Day wanted to train students to summarize expository text. Consequently their rules are prescriptive and deal with expository structures. Brown and Day's rules are:

- (1) deletion - delete trivial and redundant information,
- (2) superordination - substitute a superordinate term in place

of a list of exemplars, (3) selection - put topic sentences from the text into a summary, (4) invention - make up topic sentences for paragraphs that lack them and put them in a summary. It should be noted that Brown and Day's superordination rule, as they apply it, reduces a list of items or actions within a paragraph (e.g., flowers for lilies, daisies and marigolds) while their invention and selection rules generalize about an entire paragraph. Hahn and Garner (1985) agree with rules specified by Brown and Day.

Hare and Borchardt (1984) agree with the four summarization rules stated by Brown and Day. They also add two more rules: (1) collapse paragraphs, and (2) polish the summary. The "collapse paragraphs" rule was added because Hare and Borchardt discovered that more mature summarizers, and expert summarizers (i.e., graduate students in English) drop the selection rule when pressed for space in favor of a paragraph combining strategy which connects information in related paragraphs. Hare and Borchardt's belief in the combining rule is based on Brown and Day's (1983) and Winograd's (1982) studies and their own self-imposed summary writing sessions. The "polishing" strategy was adopted because they agree with Winograd's belief that the addition of connecting words like "and" or "because" or paraphrasing often differentiates a summary of awkward, unconnected main ideas from a finished product. It also makes more explicit the

relationship among chunks of text. The polishing rule, however, is more of a rewriting rule than a summarization rule.

The rules for summarization stated by researchers referenced in this section address the hierarchical nature of text. However, only Brown and Day, and Hare and Borchardt's rules have been directly applied to teaching students to write better summaries. Those rules do not consistently guide students to work from the top down when applying summarization rules because they allow students to work on the lower levels of importance before or instead of looking at the larger structure. For instance, students are told to reduce lists by thinking of a term for a whole list (often found at a low importance-level in the text's structure), then to invent or locate topic sentences and then to delete repeated information (also often found at a low importance-level). Training of this type could potentially distract college students from attending to the higher levels of text meaning critical to success in many college courses.

On the other hand, training in the present study directs students to look at a higher importance-level than that found in the shorter texts employed in previous summarization training studies. That higher importance-level generalizes about an entire section of text as signaled by a topic heading. The prescriptive rules of the present study are

similar to the descriptive rules provided by Kintsch, van Dijk and Meyer as well as the prescriptive methods advocated by researchers working in the area of recall. A more in-depth discussion of Meyer's work and of studies relating training in discourse structure to recall is included in subsequent sections of this report.

Relationship Between Discourse Structure And Recall

A substantial amount of research by Meyer and others has related discourse structure to what information is remembered from prose. Specifically, superordinate ideas in a passage with a hierarchically organized content structure are recalled and retained more frequently than the subordinate ideas in the structure. This phenomenon has been called the "levels effect" by several researchers and has been confirmed with various types of materials, recall tasks and subjects.

In an early study relating discourse structure to recall, Meyer (1973) had Cornell undergraduates listen to approximately 500 word text taken from the magazine Scientific American and write down everything they could remember from a passage. Recall was found to be influenced by structure in several ways. First, ideas higher in the structure or ideas having more other ideas descending from them were recalled more often. Second, when a particular idea was recalled, there was a high probability that the idea immediately above it in the structure was also recalled. (When students recalled

a particular idea, they recalled the idea unit above it 70% of the time, although overall passage recall was only about 23%). Third, idea units high in the structure were most stable when students were asked to recall a passage a second time (just after handing in their first written recall). Meyer stated that these findings were compatible with the hypothesis that subjects use idea units higher in the content structure of a passage to cue the recall of units immediately below them. She also noted that upon the first exposure to a passage, main ideas tended to be acquired better than ideas lower in the logical structure.

Stating that lack of a procedure for analyzing the structure among the ideas contained in a text as one reason for little previous research investigating the effects of structural variables on the retention of information in normal text, Meyer (1975) developed an approach for analyzing the structure of the semantic content of a passage. This procedure yields hierarchically arranged tree structures with nodes containing content words from a passage and labels which state relationships among the content.

This hierarchically arranged display of the content is called the content structure and shows how some ideas in a passage are subordinate to other ideas. The labels, based on Grimes 1972 semantic grammar of propositions, specify role relations and rhetorical relations. Role relations classify

the way that lexical predicates relate to their arguments. Lexical predicates are words related to their arguments by specific semantic roles. An example of a role relation is that of "agent," an instigator of an action. Rhetorical relations (called rhetorical predicates) are explicit organizing relations in prose and are responsible for giving prose its overall organization. For example, paratactic rhetorical predicates have at least two arguments of equal weight as in a passage stating a problem and its solution.

In addition, Meyer defined "signaling" as "a non-content aspect of prose which gives emphasis to certain aspects of the semantic content or points out aspects of the structure of the content" (Meyer, 1975, p.77). An example of a signal (as the term is used in the next study discussed) are the words "problems" and "solution" which signal to the reader that the passage discusses more than one problem and the one solution which will address those problems. Signal words are not included in the content structure since they simply accent information already contained in the display.

Meyer's approach allows for two procedures for analyzing prose. They are bottom-to-top and top-to-bottom parsing. Bottom-to-top parsing starts with the simple sentences in text and progressively builds to the upper levels of the hierarchical structure to show the interrelationships among simple sentences. Top-to-bottom parsing begins with

identifying main propositions in a passage and classifying their relationships. After this, the complex propositions are broken down to the extent desired. The latter procedure is valuable when only the top levels of organization of a passage are needed since it is extremely time consuming to diagram minutely all the information in a text. This is the case with the present study where the top three levels of text were used for summary inclusion.

After developing this approach for analyzing prose structure, Meyer continued her 1975 study by examining the effects of structure variables on learning and retention of textbook information. In this study, Cornell undergraduates read 575-word passages which varied on whether target paragraphs were high or low in the content structure, the general topic they discussed, the correspondence among their content structures, and the presence of signaling. Students were asked to complete a written free recall test for retention of the target paragraph right after reading a passage. One week later, students were asked to complete a free recall and a cued recall test for retention of information.

Results indicated that information high in the content structure of a passage is immediately recalled much better than when that same information is low in the content structure of another passage. One week after reading a

passage, students recalled information high in the content structure at least twice as well as that same information when it was low in the content structure. When content words were provided as cues in the delayed cued recall condition, recall scores for information high in the content structure were superior to recall scores for information low in the structure. The pattern of specific functional relationships at the top levels of the content structure had a strong effect on what information was recalled, while at the lower levels of the content structure, recall was determined almost entirely by the particular type of content. Recall differences among broad classifications of functional relationships (such as rhetorical versus role relationships) were not found. However, the specific type of relations called manner relations showed unusually poor recall under all conditions (manner relations describe the way an event is performed). Signaling did not significantly increase recall, but this could have occurred because signaling was aimed at information high in the content structure which was recalled well regardless of the presence of signals. Signals aimed at information lower in the structure could have had a different influence on recall.

Meyer and Rice (1980) continued investigating the relationship between discourse structure and recall in other populations. In a study involving college-educated young (20

to 33 years), middle (41 to 55 years) and older adults (58-79 years), subjects read a 641-word passage organized with an attribution structure only once and then recalled the passage in writing. After this, they filled out an outline and then answered questions about the passage. The questions were written to tap information high or low in the content structure of the passage. The results showed that taken as one group, all subjects remembered more information from the highest level in the content structure in their free recalls. However, young adults recalled more high content level information in their free recalls than middle or older adults, while older and middle adults outperformed young adults when answering detail questions. Nevertheless, older adults did include a substantial amount of high content-level information in their free recalls, and there was no difference among groups in the outline completion task. No age differences were found in the total amount of information remembered which caused Meyer and Rice to conclude that there is no age related deficit in the amount of information recalled from prose. Age related differences regarding sensitivity to levels of information were attributed to an "adaptation to school," as all young adults were enrolled in college.

In another study examining the influence of text structure on recall, Meyer & Rice (1983a) demonstrated that young, middle aged and older adult expert readers were more

likely to use a structure strategy when the authors used signals that corresponded with the way 388-word prose was organized rather than when signals were deliberately put in to conflict with the organizational plan. Provision of clear signals also resulted in recalls that were organized in the same manner as the original text. Conversely, when the author's signaling devices were in conflict with the organization plan, readers simply listed what they could remember from a passage. These recalls were less likely to be organized by the same plan used by the author, showed little effect for levels of importance, and contained fewer of the logical relationships found in the original passages.

Knowing that college students who were considered good readers used higher levels of content structure for recall purposes, Meyer, Brandt and Bluth (1980) studied ninth graders with high, low and average reading comprehension to determine whether younger students also used this strategy. This study demonstrated that fewer than 50% of the students who read 169 to 242-word expository passages organized with a problem/solution or comparison top-level structure used the author's top-level schema on immediate and delayed recall tests as indicated by written protocols. Most students who were rated higher in comprehension used the author's top-level schema while those rated lower did not. Use of top-level structure was a better predictor of recall than were scores on

vocabulary or comprehension tests (which frequently use very short passages), and students who used the author's macrostructure discriminated better between information consistent with the semantics of the passage and extraneous information on the same topic. The use of signaling helped low and average readers on immediate but not on delayed recall tests. Good readers did not need signals to perform well. The authors state that students who did not use the structure strategy tried to list descriptions from the passages without trying to interrelate them while students who employed the structure strategy developed a retrieval network. Use of the top-level structure for retrieval appeared to provide a systematic top-down search of a hierarchy.

The awareness that text structure had an effect on recall in adult and ninth-grade populations caused McGee (1982) to investigate whether elementary school children are aware of text structure. McGee had third and fifth-grade good readers and poor fifth-grade readers read and orally recall two 125-word expository passages written at the third-grade readability level. Recalls were analyzed to determine how closely recall structures resembled the author's structure. They were also analyzed for proportionate recall of superordinate and subordinate idea units. The results indicated that fifth-grade good readers are more aware of text structure than fifth-grade poor readers, while fifth-grade

poor readers are more aware of text structure than third-grade good readers. Likewise, fifth-grade good readers recall more superordinate idea units than fifth-grade poor readers, while fifth-grade poor readers record more superordinate idea units than third grade good readers. The results suggest that third-grade good readers displayed little awareness of text structure and recalled little information (often in a list-like fashion), while fifth-grade poor readers had developed some sensitivity to text structure. The majority of fifth-grade good readers used the full text structure to organize their recall.

Because sixth-grade students in a previous study (Taylor, 1980) did not demonstrate sensitivity to text structure for texts written on the sixth-grade level, McGee concluded that the superior performance she found may be due to the relative ease of the text used in her study (texts in both studies were on similar topics and had identical structures). This may have allowed fifth-grade good readers to devote attention to perceiving structural relationships among ideas rather than to decoding. McGee's study also suggests that awareness of text structure is correlated with recall of high importance-level textual information. The passages used for this study, however, were relatively short, so that a bottom-up approach and a top-down approach might yield similar results.

Studies relating what is remembered from prose to

discourse structure suggest that there is value in training developmental students to use a top-down, hierarchical approach when writing summaries. These studies also justify testing whether such training can improve recall of prose for these students. These assertions can be made for several reasons. Expert readers appear to retrieve information by using a systematic top-down search while poor readers are unaware of the hierarchical nature of text and try to list information without using a retrieval network. Developmental readers are poor readers and therefore are unlikely to employ this structure strategy for writing summaries or retrieving information. Consequently, developmental students are likely to write poor summaries and to recall less textual information than students who are able to employ this strategy.

Effects of Top-Level Organizational Patterns on Recall

Passages can be written with different types of superordinate (top-level) structures. Meyer and Rice (1980) identified four types of structures based on Meyer's (1975) prose analysis system: An adversive structure compares a favored view to an opposing view; a covariance structure (often called causation) relates an antecedent to a consequent; a response structure relates a problem to a solution; and an attribution structure relates a collection of attributes to an event or idea. Another structure identified by Meyer and Freedle (1984) is a collection of descriptions.

A collection of descriptions gives a number of attributes, specifics or settings about a topic. An example of a collection of descriptions structure is a passage about three attributes of whales (friendliness towards humans, mutual cooperation among whales and unusual physical traits) and the discussion of those attributes.

The attributive and collection of descriptions structures are considered to provide "looser" organization because they have only one organizational component, grouping by association. Therefore, discourse organized according to attributive and collection of descriptions structures are expected to result in the poorest recall. The covariance (causation) schema surpasses these two structures in organization because it is grouped according to association, relates information before and after in time and is causally related. The response structure is even more organized than attribution, collection of descriptions or covariance structures because it has the organizational components of causation with the addition of overlapping content between propositions in the problem and solution. The comparison structure is considered to be as highly organized as the covariance structure because it has a number of matching relationships and issues (Meyer & Freedle, 1984).

Research studies described in this section indicate that in some populations causation or comparison top-level

structures facilitate recall better than an attribution structure. Causation or comparison structures also facilitate recall better than a collection of descriptions structure.

Since previous research suggested that the reader pays particular attention to the top-level information in the content structure, and noting that in her 1971 study subjects remembered twice as much of a passage with a response structure as one with an attributive structure, Meyer (1977a) designed a study to see whether certain top-level organizational patterns facilitate memory of an entire passage better than other patterns. Two expository 141-word texts classified according to their top-level rhetorical predicates were used in this experiment. The rhetorical predicates were covariance (antecedent and consequence) and attribution.

In this study, two groups of Western state College graduate students listened to one discourse type dealing with the same information. Subjects wrote all they could recall about the passage immediately after listening to it, as well as one week later. In both cases, more information was remembered from the passage with the covariance top-level structure than was remembered when that same information was organized with an attribution rhetorical predicate.

In another study, Meyer & Freedle (1984) found that when listening to 141-word text cast into one of four versions (causal, problem/solution, comparison or a collection of

descriptions) graduate students demonstrated less short and long term retention for the collection of descriptions and problem/solution passages than for causation or comparison passages when they were asked to recall in writing all they could remember about a passage. The fact that retention of the problem/solution passage did not also surpass retention for the collection of descriptions passage surprised the authors. The authors also noted that subjects used the same top-level structure as the original passage for the comparison and causation passages but did not use the author's structure for the problem/solution passage. Further investigation revealed that subjects strongly disagreed with the author's "solution" and this might have been what caused them to organize recall essays in an unexpected manner which in turn might have resulted in poor recall.

In order to investigate the generalizability of superior recall being facilitated by a comparison as opposed to a collection of descriptions structure, Meyer and Freedle conducted a second experiment (described in the same report as above). In this experiment, they asked 20 graduate students to listen to 184-word passages that were written on different topics than those in the previous experiment. These passages had identical ideas, but one passage was organized with a comparison structure and another was organized with a collection of descriptions structure. Most subjects organized

their recall protocols with the same discourse type as that in the original passage. The comparison passage facilitated recall more than did the collection of descriptions passage.

These two experiments caused the authors to draw several conclusions. First, the discourse types of comparison and causation facilitate learning and memory after listening to a text more than the discourse type of a collection of descriptions. Second, when learners strongly disagree with the author's message, they may reject the author's schema and substitute another. Third, when learners employ a schema to process the text in a different way than that suggested by the discourse type, fewer facts are encoded in memory.

Meyer and Rice (1980) conducted two experiments to examine the effects of organizational variables on the recall of prose. The first experiment, (described in the previous section of this review) focused on age related differences in the amount and type of information remembered from prose, while the second experiment (described in the same report as the first experiment) determined whether young, middle aged and older subjects exhibited differential recall of 141-word prose when the prose was organized according to different top-level structures. Two versions of each of two passages on different topics were prepared. One version of each topic had an adversive top-level structure, and one version of each topic had an attribution top-level structure. Each subject

read and recalled in writing one passage of each content and of each top-level structure. After each written recall, subjects filled in an outline on the passage just read.

Age groups did not differ significantly on amount of information included in passage summaries or in listing of main ideas on the outline, but there was an interaction effect for the order of presentation and age for middle and older adults but not for young adults on the passage summaries. Older and young adults remembered significantly more from the second passage read than from the first passage. The effects of discourse type closely approached significance ($.05 < p < .064$). The trend was for superior performance on the adversive versions of the passages. The authors concluded that no age related deficit in the quality of information recalled from prose or the use of top-level structure was found, but that a "practice effect" was observed for the older adults. They advise that studies measuring the ability of older adults to recall prose should take this into account.

Another study (Meyer & Rice, 1983b) was conducted to determine whether adult subjects in different age groups exhibit differential recall of prose when it is organized according to a comparison or a collection of descriptions top-level structure. The authors expected discourse types to facilitate recall in different ways for different groups of subjects varying in age and vocabulary performance. For

instance, they predicted that older adults of high average reading ability would perform better on collection of descriptions passages because their everyday activities might involve reading passages that were organized as lists (such as recipes) rather than as comparisons. On the other hand, they thought that young adults of similar verbal ability would perform better on comparative structures because those structures are used more frequently in school.

Two 184-word passages (one with a comparison structure and one with a collection of descriptions structure) were prepared for two different topics. The subjects were young, middle and older adults of high and high average vocabulary ability who were assigned to one of two groups based on a stratified random sampling procedure. One group listened to two collection of descriptions passages and another listened to two comparison passages. After listening to each passage, subjects were asked to write down everything they could remember about the passage. Results showed that the comparison structure yielded superior recall for all age groups and that there was no interaction between discourse type, age and verbal ability.

Studies reviewed in this section indicate that the collection of descriptions superordinate structure is more difficult to remember than most other types of structures. The training materials as well as the posttest in the present

study all have a collection of descriptions top-level structure. Since even good readers have trouble remembering ideas contained within this type of structure, it is likely that developmental students will have trouble remembering information when it is cast into this type of format. Therefore, it is worth investigating whether training in understanding this type of structure improves developmental students delayed recall of text as a natural byproduct of summarization training.

The present study addresses the issue of whether an understanding of a collection of descriptions top-level structure improves delayed recall when no study methods are taught and students are not advised that they will be tested. However, even if training does not improve delayed recall, it is important to demonstrate that developmental students can be trained to understand this type of structure, an issue not addressed by previous research. Should the present study show that students have been trained to write adequate summaries, it would imply that they understand a collection of descriptions structure. Once it is established that developmental students can be trained to understand this type of structure, it would make sense for future researchers to develop training programs teaching students how to remember information when it is organized in this manner.

Developmental Studies of Summarization Proficiency

Researchers have investigated at what age level students are able to perform various summarization tasks. Some of the studies mentioned here are discussed in other sections of this report, but are used here with emphasis on developmental change. In addition, Brown and Day's (1983) analysis of proficiency in applying summarization rules included 5th, 7th, and 10th-grade students as well as junior college and four-year college students. However, their research is reported in the appropriate section of this report in order to allow the reader to gain a clearer understanding of what summarization tasks students at each developmental level can perform.

One indication of summary writing ability is use of an author's discourse plan (top-level structure) when attempting to recall prose. Use of plans is related to an understanding of text structure which is a prerequisite skill for writing summaries. Previous research has shown that about 50% of ninth graders (Meyer, Brandt & Bluth, 1980) and junior college students (Meyer, 1980; 1981) did not use the author's discourse plan when asked to write essays recalling what they remembered from a text. A greater percentage of Cornell graduates used the author's plan when writing recall summaries, and 80-100% of college graduates used them (Meyer, 1982a). A study of graduate students (Meyer & Freedle, 1984) showed that most graduate students used the author's plan when

producing recall summaries as long as they were not in strong disagreement with the content of the selection. It seems that use of an author's discourse plan increases with academic sophistication. Because research shows that only 50% of prepared junior college students use the author's discourse plan when writing recall summaries, it is likely that developmental students who function at lower levels will need even more help in understanding text structure. More direct evidence of what summarization tasks students at various developmental levels are able to perform is included in the following sections of this report.

Elementary School

Hahn and Garner (1985) wanted to determine at what age students could identify rather than produce a well-written summary. After having students in grades two, four and six read and listen to an expository text, the researchers showed a video tape where confederate 5th-grade students read "good," "less good," and "poor" summaries that were actually prepared by the researchers, and asked students to rate them. The "bad" summary displayed high-interest, low-importance material while the "less-good" summary was a verbatim rendering of the first half of the text. The "good" summary demonstrated agreed-upon summarization rules. It was discovered that most 4th and 6th-grade students rated the "bad" summary appropriately while most 2nd graders preferred the "bad"

version. Some 4th and 6th-grade students preferred the long, verbatim "less good" version to the succinct, integrated "good" summary. The researchers concluded that students at this early age do not recognize a good summary because they prefer material that is interesting to them rather than material that generalizes about the text. They note that many upper grade-level students need refinement of their understanding of what makes a good summary.

Garner, Belcher, Winfield and Smith (1985) studied good and poor 5th-grade readers' ability to recognize and produce good summaries as well as their ability to reflect upon adept production. They found that most 5th-grade students could identify good summaries, but many at both reading levels could not produce them. Few of these students could verbalize the rules commonly acknowledged to be used by experts in generating written summaries.

Brown and Day (1983) studied 5th-grade students' ability to employ summarization rules. They found that students were able to delete trivial and redundant information with 90% accuracy. Ability to use this rule put them on par with other age groups studied by Brown and Day in that 7th, 10th and 4-year college students also applied this rule with 90% accuracy. Fifth-grade students were not able to supply a superordinate for a list of exemplars. Instead of applying this rule, 5th-grade students tended to delete the entire list

almost all the time. Fifth graders were able to select topic sentences appropriate for inclusion in summaries approximately 25% of the time. They were able to invent topic sentences needed for summaries when no in-text topic sentence was present approximately 15% of the time.

Middle Grade Students

Brown and Day (1983) studied 7th-grade students' ability to employ summarization rules. These students applied deletion rules with 90% accuracy. They were able to perform the superordination rule 37% of the time. Brown and Day concluded that marginal ability to use this rule starts around this age in that 5th-graders were almost never able to perform this transformation. Students in grade 7 were able to apply the selection of topic sentence rule about 35% of the time, and the invention of topic sentence rule about 25% of the time. This indicated about a 10% improvement from 5th graders' ability to use these rules.

Winograd (1984) was interested in whether poor eighth-grade readers' problems with summarization stemmed from confusion about the demands of the task or from difficulty identifying main ideas in a passage. Results of his study indicated that most poor readers knew that a summary should include main ideas but had difficulty in identifying them as indicated by the fact that they chose details as the greatest level of importance in a passage. The details that poor

readers chose seemed to be those with high personal interest, a finding similar to that of Hahn and Garner for younger readers. Good readers also knew that a summary should include main ideas, but unlike poor readers they were able to identify them. A third difference between good and poor readers' performance was the degree of relationship between what they identified as the greatest level of importance and what they included in their summaries. Good readers included the ideas they selected as the greatest level of importance in their summaries while poor readers did not. In this regard, poor readers seemed to be adversely affected by the position of the information (they chose ideas near the beginning of the selection) while good readers were not affected by this.

High School Students

Brown and Day's (1983) study of developmental proficiency in applying summarization rules indicated that 10th graders were able to employ deletion rules with 90% accuracy as did younger (5th and 7th-grade) and older (4-year college) students. Use of the superordination rule seems to increase substantially around this age in that 10th graders employed this rule with 70% accuracy (grade 7 students applied this rule only 37% of the time). Grade 10 students were able to select in-text topic sentences about 55% of the time and invented topic sentences necessary for summary inclusion about 40% of the time.

Sjostrom and Hare (1984) found that 9th and 10th-grade minority students improved in selecting topic sentences for inclusion in 80-word summaries when trained to identify and invent main ideas of paragraphs presented in isolation, but this type of training did not improve their ability to invent topic sentences when writing summaries. Hare and Borchardt (1984) state that minority 11th-grade high school students showed marginal ability to select and invent topic sentences as well as marginal ability to collapse and polish paragraphs when writing 80-word summaries even after they were trained in summarization rule use.

Junior College Students

The poor performance of four-year college students on using many agreed upon summarization rules prompted Brown and Day (1983) to investigate how often junior college students could apply these rules. Students studied were enrolled in regular college English courses and were not considered remedial. They found that junior college students could apply deletion rules 90% of the time. This performance is equal to all other groups studied (5th grade, 7th grade, 10th grade and four-year college students). Junior college students successfully applied the superordination rule about 57% of the time. They were able to apply the selection of topic sentence rule about 35% of the time, and the invention of topic sentence rule about 25% of the time. This showed that junior

college students of average ability perform between the 7th and 10th-grade level when applying the superordination rule. Junior college students perform invention and selection rules at the same levels as 7th-graders.

Day (1980) found that prior to training junior college poor readers were found to appropriately delete redundant material 80% of the time and trivial material 88% of the time which is below 5th-grade performance. Poor readers were able to efficiently supply a superordinate one fifth of the time, and therefore their performance fell below the 7th-grade level. Poor readers included topic sentences from the texts one fourth of the time, making their performance equivalent to that of 5th graders. Poor readers invented topic sentences for their summaries only 3% of the time. This performance is worse than that of average 5th-grade students.

Four-Year College Students

Brown and Day's (1983) comparative study of summarization rule use proficiency indicated that 4-year college students were able to apply deletion rules 90% of the time. While this performance is good, it is equal to the performance of the 5th, 7th and 10th-graders studied. Four-year college students correctly applied the superordination rule 70% of the time. While this is adequate, their performance was equal to 10th-grade students. College students successfully applied the selection of topic sentence rule 40% of the time. This leaves

much room for improvement. They were able to apply the invention of topic sentence rule 49% of the time. This is mediocre performance at best, considering that college rhetoric teachers are able to apply the invention rule with 100% accuracy (Day, 1980). This data shows that the more sophisticated summarization rules of superordination of lists, and selection and invention of topic sentences are difficult even for four-year college students.

Garner (1982) found that 4-year college seniors enrolled in a teacher education program could be categorized as high or low-efficient summarizers when asked to summarize a 167-word paragraph. Differences in summarization skill were reflected in differences in ability to verbalize summarization rules in that high-efficient summarizers verbalized most rules more frequently than low-efficient summarizers. Despite this, both groups mentioned the delete trivial information rule with the same frequency, and no subject mentioned the invent a topic sentence rule although many subjects were able to actually perform this task. There was low overall (across efficiency groups) performance in ability to verbalize all but the deletion rules.

Johns (1985) wanted to see if underprepared 4-year college students could produce an appropriate condensed version of a text. Consequently she studied the summary protocols of underprepared students in contrast to those of

two other groups (prepared freshmen and upper-level/graduate students) and developed a scale for coding replications and distortions of the original text found in the student's protocols. In this study, Johns asked students to write 100 word summaries of an approximately 630 word text. While graduate students did much better than the other two groups on all measures, the study showed several differences between prepared and underprepared students:

(1) Prepared students included more correct main ideas than underprepared students. Underprepared students did not include most of the main idea units from the original passage which means that they did not produce an appropriate condensed version of the original passage.

(2) When summarizing, underprepared students did not just concentrate on the first half of the passage as Winograd (1984) observed when analyzing 8th grade poor readers' summaries. Their choice of which idea units to include were idiosyncratic in that they often skipped large sections of a text or included ideas that appealed to them rather than including generalizations or macro-ideas.

3) In comparison to prepared students, underprepared students concentrated more on idea-unit level reproductions than on combinations or macro-propositions. Reproductions at the idea-unit level required only the copying or paraphrasing of an idea from the original. Combinations required the

combination of two idea units into a sentence which was not combined in the original. Macropropositions were generalizations about a paragraph or about the entire passage.

(4) Underprepared students included more distortions than prepared students only at the macro-proposition level, and also added more incorrect information than prepared students at this level. Underprepared students did not include more distortions at the combination or idea-unit levels and did not add more personal comments than prepared students. A surprising finding was that both the underprepared and the prepared students put personal comments into their summaries.

College Educated Adults

Researchers have attempted to discover whether or not adults are sensitive to levels of importance in a text. In a study involving college educated adults in three age groups (20-33, 41-55, and 58-79), Meyer and Rice (1980) found that young adults remembered more information high in the hierarchical structure of the text than the other groups. Their findings indicated that only the youngest group demonstrated sensitivity to different levels of information, although it must be said that no difference was found in total recall among these groups. The researchers attributed the younger group's perception of information levels to current educational practices rather than to reading comprehension or

organizational deficits in the older groups.

Graduate students in a reading education program were able to rate the importance-level of sentences within a paragraph in accordance with expert summarizers. They also demonstrated proficiency in knowing when an explicit topic sentence was not in a paragraph (Garner, 1982). Brown and Day (1983) found that 4th-year graduate students in English (considered expert summarizers) who had taught college rhetoric courses performed deletion and superordination rules with almost 100% accuracy. They performed the select a topic sentence rule with 60% accuracy and the invent a topic sentence rule with 84% accuracy. However, Brown and Day state that their scoring method did not allow for combining two topic sentences into one sentence (a paragraph combining strategy). These experts did this on almost all occasions when they did not receive credit for the invention rule and often when they did not receive credit for the selection rule. This was not the case for students at all other levels who rarely combined paragraphs. On the other hand, expert summarizers favored the paragraph combining strategy and attempted to use it whenever they could.

Brown and Day were also concerned with whether these expert summarizers could state summarization rules. They found that prior to summarizing, experts did not state any typically agreed upon rules when questioned. However, when

asked to verbally report on what they were doing during summarizing activities, 40% of their comments were judged to be a statement of a rule. Of the statements judged to be a reference to a summarization rule, 68% were a statement of one of the five rules listed by Brown and Day (1980).

In summary, the developmental trend in the acquisition of summary writing ability indicates that older subjects have more strategies at their command and can get more content into the same number of words by using summarization procedures. Nevertheless, research supports the common complaints that even undergraduate university students of average ability possess inadequate summarization skills. The poor performance of underprepared college students and junior college students of average abilities on summarization tasks shows that summarization is a difficult skill for less experienced students.

Because developmental students function at even a lower level than average junior college students, it is likely that they will perform less adequately and will need even more help in learning to summarize text than prepared junior college students. Further evidence that developmental students are in need of summarization training is indicated by the fact that underprepared university students cannot produce an appropriate summary of a text. Moreover, Day's study of junior college students of poor reading and writing ability

places their summarization abilities at about the 5th-grade level. Consequently, there is a great need to develop and examine programs to train developmental students to write summaries of expository text.

Rating Summaries

Several researchers have developed methods for studying the quality of summaries. In general, these methods fit into one of four categories: idea units present, summarization rules applied, efficiency of summaries, or holistic scoring.

Meyer (1975) described a method for scoring recall protocols from a passage with the use of the content structure of the passage. This procedure scores protocols for their presence or absence of idea units, which are meaningful units from a passage. Idea units are substantive rather than verbatim pieces of information and can be represented by a word, definition, phrase or sentence. In contrast to previous use of idea units, Meyer's approach scored recall protocols for correctly specifying relationships among content units found in a passage as well as for including specific content. Meyer notes that variations of this scoring procedure can be made in order to adapt it to the requirements of a particular experiment. One example of this would be to give certain information in the content structure greater weight than other information. This is the case with the scoring method used for the present study.

Garner & McCaleb (1985) rated summaries for inclusion of idea units but also gave summaries a score for integration of material. This system allotted one point for each of the key ideas included in summaries that were present at the "gist" level in the original text. Each subject was given a score for the integration level of their summaries in the following manner:

0 - no important ideas present; 1 - important ideas in separate sentences; 2 - two important units combined in a single sentence; 3 - three important units combined in a single sentence; 4 - all important units combined in a single sentence. Explicit decision rules were decided upon after the first twenty summaries were scored independently by two investigators and then compared. The other 100 summaries were then scored individually by two investigators blind to experimental manipulations.

Although Day (1980) also scored protocols for use of idea units, the primary goal of her study was to note all instances of use of inferred summarization rules. For example, subjects were given credit for each topic sentence they used from the text. A proportion was created by the number of times a subject used a rule divided by the number of times it was possible to use each rule. Therefore, each summary received five scores, one for each of the rules being tested.

Garner (1982) was interested in determining how efficient

students' summaries were. In order to do this, she had 16 graduate students in the reading education program rate each sentence in a 167-word paragraph as 3 (very important), 2 (moderately important), or 1 (unimportant). The students were also asked to underline any in-text topic sentences. The students gave the highest ratings to the three ideas considered most important by the researcher. The degree of elaboration of ideas was ignored. The number of words used was tallied by the investigator. The efficiency rating became the ratio of the number of important ideas included to the number of words used. With this method she was able to identify high versus low-efficient summarizers.

In order to make it possible to identify which ideas from the original passage were included in the summary, as well as to record what transformations had been performed on those ideas, Winograd (1982) devised a method for coding ideas found in students' summaries. His system includes four kinds of transformations: reproductions - subjects reproduce individual sentences in the original passage using paraphrasing or word for word copying; combinations - subjects combine two or more sentences in the original passage into one sentence; run-on combinations - elements from several sentences in the original are included but in a less organized way than those scored as combinations; and inventions - subjects produce individual sentences which

convey the meaning of a paragraph, several paragraphs or of the whole passage. While these inventions relate to the passage, it can be difficult to tie them to any specific elements in the surface structure of the original sentences.

Ann Johns (1985) created an expanded version of the 1984 Winograd rating system of correct replications and distortions by developing a number of sub-categories for idea-unit level, combined idea-unit-level, and macro-concept level elements. For instance, Winograd's system did not have a category for "distortions" which are inaccurate representations of text. John's system includes two general categories: Correct Replications and Distortions. In addition, there are a number of sub-categories for idea-unit level, combined idea-unit level and macro-concept level elements. The point of her rating scale is that elegance of structure and accuracy of meaning are potentially separate. Her claim is that this system is more accurate for the underprepared students she studied. Johns' system does not fit the purpose of the present study in that the present study does not attempt to analyze the type of problems developmental students have when writing summaries. The present study attempts to train students to write better summaries and to measure this by scoring the inclusion of idea units. However, her observation that underprepared college students write less adequate summaries than prepared students (as described in the

Developmental Studies of Summarization Proficiency section of this report) indicates that there is a need to develop summary writing training programs for developmental students who may function at or below the level of the students she studied.

Finally, some researchers prefer to use a holistic scoring method for rating written summaries. For instance, Prater and Terry (1985) used Educational Testing Service scoring methods which involved two readers trained to score essays using a four-point scale. This scale ranged from inadequate to exemplary. The raters' task was to determine independently where a piece of writing as a whole fit along the scale. Scores that differed by more than one point were arbitrated by a third reader (Educational Testing Service, 1979). Since Prater was interested in the overall quality of the summaries her students wrote after training, this method suited her purpose.

Armbruster, Anderson and Ostertag (1986) combined the idea unit method of scoring 5th grade students' summaries while noting incorrect transformations. In addition, they also scored summaries as they would essays. In order to rate summaries, they divided passages into idea units which were basically independent clauses. These were listed in the order in which they appeared in the passage. Five adults were asked to place a 1 beside the idea units that were most important to the passage, a 2 next to the next most important units, and so

on for the four levels of importance. The adult ratings were averaged to form a key against which student summaries were rated. The summary protocols of subjects were divided into idea units and two scorers match sorted the idea units from the summary protocols into one of the levels of importance determined earlier. Extraneous ideas, a fifth category, consisted of information not present in the original passage. This included distortions and intrusions. The interrater agreement was found to be 94% for a random sample of about one-third of the summaries. In addition to this, summaries were evaluated for the quality of writing using the Rating Guide for Functional Writing as developed for the Illinois Writing Assessment Program (Illinois State Board of Education, 1984). This rating guide generates scores for focus, support and organization as well as an overall holistic (integration) score. This allowed the researcher to evaluate the multiple effects of summary writing training on quality of writing as well as inclusion of important ideas in the summary. The results showed that students trained in the use of structure received much higher quality ratings on the dimension of organization, as well as on focus and integration.

The primary purpose of the present study is to evaluate whether students can be trained to include ideas at the appropriate importance-levels in their summaries. Therefore, the idea unit rating system was deemed most appropriate for

evaluating student posttest summaries. The rating system used in the present study resembles the system used by Meyer (1975) in that summaries were scored for both idea units of content and relationships as identified in the content structure.

However, the rating system used for the summary writing posttest in the present study differs from Meyer's system in three ways. First, in the present study summaries were scored on a 100 point scale so that the scores for total summaries could be judged as either adequate or inadequate. This would be similar to what instructors actually do when they judge a student essay for content. Second, students were given more points for including idea units from the first two importance-levels than for ideas placed at the third importance-level of the content structure of the original text (Meyer allowed one point for each idea unit). Scores were weighted in this way because including the top two levels of ideas of the content structure indicated that students produced a well integrated report of the passage. Third, students were not given credit for including any idea unit that was considered below the third level of importance. This was decided upon because an important element in writing good summaries is making decisions about what information from the original text to include. Because students were not permitted to write summaries greater than 300 words, they could not just copy large chunks of text and receive high scores. Meyer has

stated that such adaptations of her system would be appropriate for certain investigations.

Methods of Instruction - Impact on Recall

In previous sections of this review it was noted that awareness of text structure is a possible aid for recall and reproduction of text. Several researchers have attempted to train students in various populations in awareness of text structure and to measure the results of this instruction.

In an experiment using intact 5th grade classes that was designed to assess the effects of explicit instruction in summarizing 100 to 500-word problem-solution text, Armbruster et al. (1986) created a workbook designed to give students guided practice in summarizing this type of text. The initial stages of instruction included a workbook with passages "framed" with questions associated with problem-solution passages. These questions were: "Who has a problem? What is the problem? What actions were taken to solve the problem? and What were the results of those actions?" (p. 13). The students copied these answers into their notebooks. Later instruction had them looking for information to answer the problem-solution questions, recording notes on passages in provided problem-solution frames, and writing summaries of framed information. During the lessons, the teacher circulated around the room helping students with their work. As students became more proficient at this task, some examples

were read or written on the board.

The results of this study showed that students who received this type of instruction recalled more macrostructure ideas and more main ideas than control group students when they were allowed to study material for 10 minutes and write a summary immediately after the passage was removed. However, both groups recalled the same amount of microstructure ideas. The experimental students also wrote better organized summaries than control group students as a result of this training.

This study took a top-down approach to teaching summary writing, but it differs from the present study in that it taught students to summarize by asking them questions rather than by teaching them to understand the macrostructure of a text. It also differs from the delayed recall aspect of the present study in that Armbruster's subjects explicitly studied the material and took the recall test right after studying the material. Also, the texts used for the experiment were shorter and consisted of a different discourse type than the text used in the present study. Nevertheless, the improvement in recall of textual information and organization of 5th grade, student written summaries indicates that there is reason to examine whether a top-down approach to teaching summary writing will benefit developmental students.

Middle grade students who have reading and writing

problems tend to remember only a few unconnected facts from things that they have read probably due to the fact that they have difficulties in following the development of ideas in textbook selections (Meyer, Brandt, & Bluth, 1980). These students also have difficulty organizing superordinate and subordinate facts when writing (Taylor, 1982). In order to address these problems, Taylor (1982) developed a hierarchical summary procedure to help 5th and 7th grade students who had reading and writing problems learn to remember more information from their texts by writing summaries (Taylor was not interested in summary writing per se). The texts used to train students were 800 words for the 5th grade students and 1500 to 2500 words for the 7th grade students. The steps in this procedure were implemented in eight one-hour sessions and were as follows:

- (1) preview a three to five page segment from a content textbook that has headings and subheadings.
- (2) write a roman numeral for every heading and a capital letter for every subheading.
- (3) leave five or six lines between capital letters to list important supporting details.
- (4) read the material subsection by subsection and then generate a main idea sentence for an entire subsection.
- (5) list two to four important supporting details for each of these main ideas.

Before going on to another section, write a topic sentence for the section just read and put it next to the roman numeral on

draft paper (it was important that they did this in their own words). (6) write key phrases in the left hand margin for any subsections that seem to go together.

The author notes that by the sixth summary students were ready to write on their own and compare their summaries to a model prepared by the teacher. After completing their summaries, students reviewed them, distinguishing between main ideas and details. After this, they retold orally what they had learned to a partner who looked at the summary and reminded the student of unrecalled information. Taylor and Beach advocate this method, which requires a lot of inventing in step 5, based on their analysis showing its positive effect on 5th and 7th grade students' delayed recall of content area reading material when they studied the material using this approach, and took a delayed recall test one day later (Taylor, 1982; Taylor & Beach, 1984). They note that this procedure also improved the quality of students' expository writing (Taylor & Beach, 1982).

Taylor and Beach's studies suggest that a similar approach might improve summaries written by developmental students. The present study is similar in that students were taught to look at the hierarchical structure of text that has subheadings. However, Taylor and Beach's studies measured the effects of summary writing training on recall when students did not have access to the text, while the primary purpose of

the present study is to increase summary writing ability when students do not have to write from memory. In addition, the present study does measure the effects of training on delayed recall one week after students wrote a summary, while the Taylor and Beach studies measure delayed recall one day after students wrote a summary. Other differences between these studies and the present one are that Taylor and Beach had students study the material and informed students that they would be tested, while in the present study students had not explicitly studied the material and were not informed that they would be tested. Despite these differences, studies by Taylor and Beach suggest that a study which attempts to train developmental students to write summaries using a top-down, hierarchical approach should be conducted.

Bartlett (1978) was aware that studies by Meyer and others suggested the possibility of a causal relationship between following and utilizing the author's top-level structure and how much and what can be remembered from text. Therefore, he taught ninth graders to identify top-level structure in 240-word classroom texts and to use the structure in organizing written recalls of the text. In this study involving intact classes, experimental students were taught how to identify and use four top-level structures. These structures were adversive, causation, problem/solution and description. However, recall essays, written immediately

after students read and summarized a text, were scored only for the adverse passage. There were several conclusions made from this study: (a) students who used top-level structure from text to organize a written recall of the text recalled more than those who did not use top-level structure; (b) students given instruction in the use of top-level structure used the strategy and performed better after its acquisition; (c) students who acquired the strategy from instruction recalled more than students who did not acquire it; and (d) students who acquired the strategy continued to use it when they read new material three weeks later and displayed better recall than students not trained in use of top-level structure. One of the structures used in this study, description, is similar to the structure of the training materials and the posttest used in the present study. Despite the fact that texts organized in a descriptive format were not used, Bartlett's work suggests that the present study's attempt to teach developmental students to follow a collection of descriptions top-level structure is a worthwhile experiment.

In another study involving structure, Slater and Graves (1986) examined the effects of instruction about discourse structure on university freshmen's recall and comprehension of 1800 to 3,000-word (7 to 14 page) college-level history text passages. In this study, students in an experimental group

were trained in discourse structure by filling in blank outlines with labeled slots for main ideas and supporting ideas and generating their own topic headings for each section. Students were then trained to write a thesis statement for several topic headings. After reviewing these summary outlines for 10 minutes, they told student partners as much as they could remember about the content of these summary outlines without looking at them. Students in a group labeled "conventional" received instruction on the same passages by completing a set of 20 practice questions based on main ideas and details from the text. A third group (labeled control) received instruction on the same passages by completing exercises containing comprehension questions, text summaries, vocabulary, and study skills. Results of the study indicated that one week after studying the material students in the experimental condition scored better on recall of unfamiliar text than either conventional or control group students. These results did not hold for familiar material (information that had been covered in class). For familiar material, the experimental and the conventional group students did equally as well, and both did better than the control group. It should be noted that intact classes were used for both parts of this study. Although a hierarchical, summary procedure was used to teach students to write better summaries, the researchers were not interested in the quality of the

summaries that students wrote. In contrast to the present study, the researchers were only interested in the effect that summary writing had on recall.

Previous research indicating that better readers understand an authors top-level structure prompted Meyer, Young and Bartlett (1989) to conduct an experiment in which 80 young and old adults of normal reading ability were trained to identify five types of superordinate discourse plans and to organize their recall protocols according to those plans. In addition, subjects in the experimental group (called the strategy group) were taught how to study the material they were asked to recall. The plans subjects were taught to identify were description, sequence, causation, problem/solution and comparison. Texts used in the study contained 230 to 500 words. The training program was comprised of five sessions, each session consisted of one and one-half hours of instruction.

The following results were observed. Subjects in the strategy group were able to correctly identify discourse plans after they were trained and continued to use these plans for recall purposes two weeks after instruction was completed. Subjects in the strategy group substantially increased the amount of information they remembered immediately after reading and summarizing an article and outperformed subjects in two control groups (one whose subjects only took a pretest

and a posttest, and one whose subjects practiced reading and remembering the same materials but were not taught the discourse plans). These results held for all five types of plans. Instruction had similar effects on both young and old adults. Finally, the strategy group recalled more high importance-level information than subjects in the other two groups.

The studies reviewed in this section all take a top-down approach when teaching students to write summaries, and indicate that this approach may improve recall of textual material. However, the primary purpose of these studies was to train students in use of discourse structure as an aid for recall while the primary purpose of the present study is to train students to summarize text. In addition, most of these studies differ from the delayed recall aspect of the present study in that previous studies measured the effects of summary writing training on recall when students explicitly studied the material. Also, most of these studies measured the effects of training when students took a recall test just after, or one day after summarizing the text while the present study measures the effects of training on recall one week after summarizing text. Studies by Slater and Graves (1986) and Bartlett (1978) that do not vary from the present one in both ways (studying a text and time between summarizing task and recall) differ in one way or the other.

The present study not only seeks to determine whether students trained in understanding discourse structure learn to summarize, but also whether they do better than untrained students on a delayed recall test when they have not studied the text or summarized an article just prior to attempting the recall task. In other words, one purpose of the present study is to see if summary writing training improves delayed recall of material after a period of one week when students have only written a summary of an article. All the studies reviewed in this section examine recall effects on populations different from that of the present study. However, they suggest that there is value in investigating whether there is improvement in recall when developmental students have been trained to understand discourse structure but have not been trained in its use as an aid for recall.

Methods of Instruction - Impact on Summary Writing Ability

As has been previously stated, many students at different grade levels can not write adequate summaries without instruction. Because of this, researchers have attempted to train students to write better summaries and to measure the effects of instruction.

Selecting main ideas of passages is a critical skill students must have before they can become proficient at writing summaries. As previously stated, students often can not identify main ideas of passages. This causes them to do

poorly on related activities like summarization or outlining (Brown & Day, 1983; Hare & Borchardt, 1984). Consequently, Sjostrom and Hare (1984) gave systematic main idea instruction to minority students in ninth and tenth grades in four 75-minute lessons. The primary objective of the study was to see if instruction would improve students' identification and invention of main ideas of paragraphs. The researchers also wanted to determine whether this instruction would influence summary writing and general reading comprehension. Each lesson employed a five-step instructional strategy developed by Baumann in 1983. These five steps were:

(1) introduction of the content (selection and invention of paragraph main ideas) and its purpose; (2) provision of a concrete example of the skill to be taught; (3) direct teacher instruction of the skill; (4) teacher-guided application of the skill; and (5) independent student practice of the skill. The researcher added a review component to several of the lessons. Results indicated that students who received this instruction did significantly better at identifying and inventing main ideas of paragraphs when they were presented in isolation. They also improved at selecting main ideas when writing a summary and at summarizing more efficiently. However, inventing main ideas when writing summaries did not improve with this type of instruction. Also, effects did not transfer to general comprehension performance as measured by

a standardized reading test. While it is interesting to see if differences can be detected on a far measure such as a standardized reading test, it is likely that proficiency in selecting main ideas is not required on this type of test, especially when passages are short.

In the present study, both control and experimental group students were given two hours of instruction on selecting and inventing main ideas in isolated paragraphs before the summary writing training program was implemented. This was done in order to minimize the effects of a lack of understanding of paragraph structure when experimental group students were taught to understand the structure of longer texts. Although the above study involved a different population, it is likely that developmental students also need extensive practice in selecting and inventing main ideas of paragraphs as well as training in understanding the structure of larger text (which was the primary focus of the present study).

Other researchers have concentrated on teaching students to write better summaries as opposed to determining the influence of main idea instruction on summary writing ability. The rest of the studies reviewed in this section describe this research.

Because a study by Day (1980) favored the use of more explicit instruction when teaching summary writing, Hare and

Borchardt (1984) conducted a study to see if an increased amount of explication about summarization rules would help students use the more difficult selection and invention rules. As in Day's 1980 study, the rules taught were from Brown and Day's (1980) original task analysis with the addition of the more advanced rules of paragraph combining and polishing. These additional rules were added as a result of the researcher's sessions with expert summarizers and the discussions that occurred as a result of those sessions. In this study, two versions of a summarization program, one taught deductively and the other taught inductively, were implemented.

The population consisted of low income minority high school students of above average ability in a special enrichment program. The texts used for instruction were two pages long, and students were required to write approximately 80-word summaries. Instruction was for three 2-hour sessions. The deductive group was given a definition of a summary and had the rule sheet and its use explained. Teachers modeled the rules and steps in the summarization process by showing students how to mark up their text. Then they received a copy of a good summary and all the steps and rules were reviewed by the teacher. The inductive method aimed for the same objectives by way of extremely directed questioning. The results showed that there was no difference in summarization

process or product observed between the two groups. However, both groups performed significantly better in summarization efficiency and rule use than a control group consisting of students who were on the waiting list for the enrichment program. However, the researchers state that even though in general experimental group students wrote better summaries, there was no significant difference between control and experimental group students' ability to select and invent main ideas or collapse and polish paragraphs. Even after training, subjects demonstrated marginal ability to use these rules.

Day (1980) created and implemented a training program teaching the summarization rules derived from Brown and Day's (1980) analysis. The subjects of Day's first experiment were junior college students of good and poor writing ability, although the students with poor writing ability had reading levels judged as normal for Freshmen. Texts were from 483 to 521 words, 35-41 lines. Students were told to make their summaries approximately 80 words. They were given training and feedback on three summaries during two class periods. Each class period lasted for approximately one hour. Students were assigned to one of four groups:

a) general self-management alone, b) rule training alone, c) rule training plus general self-management strategies and d) rule training integrated with specific self-management strategies.

The general self-management alone group received training giving them general directions on how to write better summaries (e.g., make sure you understand the text, check your summary against the original, etc.) Students in the rule training alone group were given training using Brown and Day's summarization rules. Students in the rule training plus general self-management group were given training using Brown and Day's summarization rules and general self-management strategies (e.g., double check summaries to make sure they contain all the important information), while students in the rule training integrated with self-management group were given training with specific self-management techniques making sure the rules had been applied (e.g., reread a paragraph, state the main point and determine whether or not it was expressed as a topic sentence).

In the three groups where summarization rules were taught, students were told to generate a statement of the theme. Next, they were they were told to pick out main ideas and say them to themselves. They were taught to mark their texts by underlining topic sentences or writing them if they were not in the paragraphs. They were also told to circle lists and to substitute a one-word term for them and to cross out trivial information. Summaries were eventually written from this marked text.

Only 33 of the original 93 students (about 8 students in

each group) completed the posttest due to a high absentee rate. The results favored the more explicit training conditions, with the most explicit training condition (rules integrated with specific self-management) being most beneficial. Other findings were as follows: (1) Both good and poor writers performed the two deletion rules (delete trivial and redundant information) almost perfectly with a minimum of training. (2) Only in the three rule training groups did performance on the superordination rule improve from the pretest to posttest with the rules integrated group performing most successfully. Average and poor writers benefitted equally from minimal training on this rule with nearly perfect performance on the posttest. (3) All three rule training groups were more successful in employing the selection of topic sentence rule on the posttest than on the pretest, but average writers performed better than poor writers and benefitted more from instruction. After training, average writers were able to perform this rule 76% of the time, and poor writers were able to perform this rule 60% of the time. Extensive practice was needed for improvement on this rule. (4) Average and poor writers started out with the same proficiency with the invention of topic sentence rule, but average writers improved more and reached a higher level of performance. Even after training, average writers were able to use this rule only 50% of the time, and poor writers

used the rule only 31% of the time. Extensive practice was needed for improvement on this rule.

Because the above experiment favored the most explicit training method, Day conducted a second experiment (described in the same report as above) where she trained 10 junior college students with poor reading and writing ability using the rules integrated with self-management technique. These students were given individualized training for two hours, the equivalent of two class periods. The materials used were the same as in the first experiment. Performance was measured by the difference in pretest and posttest achievement.

In this experiment, prior to training, poor readers were found to appropriately delete redundant material 80% of the time and trivial material 88% of the time. While this performance is not bad, it leaves room for improvement considering that even 5th graders are able to delete redundant and trivial material 90% of the time. Poor readers were able to efficiently supply a superordinate one fifth of the time, and therefore their performance was similar to that of poor writers in experiment one. Poor readers included topic sentences from the texts one fourth of the time, making their performance equivalent to that of poor writers in experiment one. Poor readers performed very badly on the invention rule, including these sentences in their summaries on average only 3% of the time. This performance is worse than that of

average 5th graders.

The data indicated that poor readers need instruction in all five rules. After one day of instruction, poor readers appropriately deleted material 93% of the time and used the superordination rule almost perfectly. After two days of training, students could employ the selection rule 56% of the time. However, results of training on the invention rule were not encouraging in that students could invent topic sentences only 10% of the time.

Day's study suggests that there is need for more research which addresses the issue of training developmental students to write better summaries. Even when materials are relatively short, poor readers do not select topic sentences needed for summaries almost 50% of the times they should. Not only did poor readers only invent topic sentences only 10% of the necessary times, but after training only three out of 10 students made up one topic sentence apiece. Furthermore, this study does not address the issue of whether developmental students can be trained to summarize longer texts which are more like the kinds of texts they will need to summarize in college courses.

Day's study points to several areas that need to be addressed when designing programs that teach developmental students to write summaries. One problem has to do with the amount of time allotted for instruction. It seems that two

hours of instruction are not enough to teach developmental students how to summarize text. Another issue has to do with what skills should be emphasized when summary writing is taught. Day's study indicates that substituting an exemplar for a list of items, and deleting trivial and redundant information are skills that can be taught with only one hour of instruction. However, it seems that including high importance-level versus low importance-level information is a skill that developmental students can not acquire with only two hours of instruction given within a one week period. The present study addresses both these issues in that deletion and superordination of lists are skills which the present study does not emphasize in favor of teaching students to include high importance-level information. Furthermore, the present study trains students for two hours on selection and invention of paragraph topic sentences as a pretraining activity, and then trains students to summarize text for five hours throughout a five week period of time.

In addition, the present study addresses the issue of whether developmental students can be trained to summarize texts similar to the ones they might encounter in college courses. The length of the articles for Day's study were shorter (about 500 words) than the articles used for this study (about 1300 words). Day's texts were at the 5th and 6th-grade levels while the articles used for the present study

were judged to be at the 9th and 10th-grade levels. Day told her students to make their summaries 80 words while the students in this study were told to make their summaries between 250 and 300 words. Thus, in this study we are attempting to help students summarize longer, more difficult material.

Several other features of the texts and method used in the present study make it more likely that students will be able to transfer summarization skills to actual college texts than materials and methods used in Day's 1980 study. First, the passages in Day's study did not have topic headings while use of topic headings is an important aspect of the training program used in the present study. Students in the present study had to select or invent sentences that generalize about an entire section of text as signaled by a topic heading. Second, students in the present study were not directed to select or invent a topic sentence for each paragraph, a practice which could direct their attention away from attending to higher levels of text. For the naturally occurring texts used for the present study, students were told generally to include information no lower than the third level of importance in their summaries and that this third level may or may not correspond to the number of paragraphs in the article. (Students were allowed to include a fourth level of importance only if it was needed to clarify a vague point).

The present study also differs from Day's study in that in the present study we are concerned with inclusion of information rather than use of summarization rules. Evaluating the quality of summaries by measuring inclusion of appropriate information is technique used by Meyer and others. While there is some overlap of these two measures, they are not always the same. For instance, it does not matter in the present study if students did not substitute a superordinate term in place of several exemplars as long as all necessary information was included. Day's study does indicate that students did include significantly more idea units on posttest than on pretest measures. However, she indicates that even with this improvement poor readers still did not write adequate summaries. Measuring the inclusion of information will enable this researcher to determine whether or not students were able to produce an appropriate condensed version of the original text.

Summary of Chapter Two

The current state of the literature regarding summarization shows that:

1. Students at various developmental levels are able to perform summarization tasks to a different extent. The developmental trend indicates that older, more educationally experienced students perform this task more proficiently than younger, less experienced students.

Despite this, even 4-year college students need additional training in summarizing text in that their performance is considered mediocre. When not trained, junior college students of average ability apply most summarization rules at levels between those shown by 7th and 10th graders.

2. When not trained in summarizing text, Junior college students considered poor writers apply summarization rules at a level shown by 5th grade students. Junior college students of poor writing and reading ability, a population equivalent to the population of the present study, apply most summarization rules with proficiency levels below those shown by 5th-grade students. Clearly, developmental students are in need of summarization training.
3. Researchers have described rules relating to the condensation of text. These rules typically have to do with elimination of nonessential material, substitutions of superordinate terms, and inclusion of explicit and implicit topic sentences for each paragraph. These rules stand in contrast to top-down approaches to teaching summary writing. Day's (1980) study indicated that developmental students improved in summary writing ability when trained using a summarization rule approach. However, results also indicated that after training these

students still did not write adequate summaries.

4. Researchers have demonstrated that good readers are aware of the hierarchical nature of expository text, and that they use a "structure strategy" for retrieval of textual information. Less proficient readers do not use knowledge of text structure for retrieval purposes and try to remember information from a passage without developing a retrieval network. Use of text structure for retrieval of information is considered to be a predictor of recall.
5. Researchers have trained students to write summaries using a top-down approach. This approach teaches students to become sensitive to the hierarchical nature of expository text and to include high importance-level information in summaries. However, studies using this approach measured students' ability to recall information from prose rather than the quality of student's summaries when they had access to the original text. In addition, this researcher is not aware of any top-down studies that train the developmental English population to either write better summaries or use knowledge of the hierarchical nature of text to recall information from prose.
6. Studies using a top-down approach measured the effects of summary writing training coupled with explicit study

techniques on delayed recall of textual information. This researcher is not aware of any studies that measured the effects of summary writing training on delayed recall of information one week after students had summarized a text without studying the material, and when they were unaware of the fact that recall would be tested.

7. Studies measuring the effects of summarization training did not take into account the effects of cognitive abilities on the results of training.

In conclusion, studies show that developmental students are less than proficient at summarizing expository text. Only one study (Day, 1980) examines the effects of summarization training on this population. There are differences in length, reading-level and the kind of articles used in that study and the present one. There are also differences in the training methods used in both studies.

The present study differs from studies that trained students in summarization rule use. Those studies did not consistently guide students to work from the top down when applying rules. Students were trained to think about the theme of the text, but they were then told to apply rules that allowed them to work on the lower levels of importance before looking at the larger structure. For instance, students were told to reduce lists by thinking of a term for a whole list (often found at a low importance-level in the text's

structure), then to invent or locate topic sentences and then to delete repeated information (also found at a low importance-level).

The present study encourages students to consistently work from the top down by having them first write a thesis statement, then write a sentence for each topic section and then write sentences describing each main idea included within each topic section. The present study also helps students understand the thesis statement by using topic headings, a technique not possible in texts that are not long enough to warrant topic headings as is the case in many of the studies cited.

The present study also differs from studies involving typical summarization rules in that it places little emphasis on the deletion rule. This is because previous studies show that developmental students do not perform as poorly on this rule as on including macropropositions and main ideas. This study also places little emphasis on the superordination rule (something at which students might not be proficient) in favor of training students to understand text structure from the top down.

One final difference between this study and studies involving rule use is the way students were taught to plan their summaries. In previous studies, students were told to mark their texts as a way to plan their summaries. Students

in this study were also encouraged to do that, but they were also encouraged to plan their summaries by making an informal, rough outline. The instructor showed students both techniques by showing them what parts of the text to mark and by presenting summaries of articles in outline form during training.

The present study also differs from previous studies that trained students to write summaries using a top-down approach. These studies examined the ability of students to recall information after they were taught to summarize text. In addition, most of the previous top-down training studies measured summarization training coupled with study techniques. The primary purpose of the present study is to determine whether developmental students can be trained to write better summaries when they have access to the original text and are taught to do so by using a top-down approach.

A secondary consideration of the present study is to determine whether summarization training had an effect on recall one week after students summarized a text. Students were not advised that they would be required to recall that information. This aspect of present study also differs from previous studies advocating a top-down approach. In previous studies, delayed recall tests were generally administered no longer than one day after students summarized text. In addition, most of the prior studies had students explicitly

study the material while in the present study this was not the case. The present study also differs from other top-down studies in that prior studies did not measure the effects of summarization training on the developmental English population. Finally, this researcher is not aware of any previous studies, regardless of training method or population, that measure the effect of cognitive abilities on the results of summarization training. The present study includes this information as part of the analysis. This allows the researcher to make recommendations about how to effectively design a summarization training program for students in the developmental English population. Consequently, the present study differs from other studies in the literature not only in the combination of population, training method and the way in which summary writing ability was measured (having access to the original text versus recall of material), but also by measuring the effect of cognitive abilities on the results of summarization training.

CHAPTER 3

Method

Introduction

The general purpose of this study is to establish the value of training community college developmental English students to write summaries of articles taken from college texts. Secondary considerations of the study are whether summarization training affects recall proficiency for students in this population, and whether training effects transferred to a standardized reading test.

In order to do this, a training program was devised by the researcher. This program took into account training in top-down, hierarchical methods of understanding text structure as reported in the literature describing the effects of this training on recall. Because these previous studies measured the effects of training on recall, modifications were made to fit the purpose of this study which was to advance an understanding of what procedures are effective in teaching summarization to this population. A summary writing posttest was devised by the researcher to measure summary writing proficiency after training. In addition to this, a cognitive abilities test was administered to all subjects to help determine whether there was an interaction between cognitive abilities and group status on summary writing ability. A delayed recall test was also devised by the researcher to

determine if summary writing training had an effect on recall ability. The Diagnostic Reading Test was administered to determine whether summarization training had any effect on general reading comprehension.

Subjects

The subjects were 58 students enrolled in five sections of a combined developmental reading/writing program for native speakers at Northern Virginia Community College, Alexandria Campus. These students were enrolled in a three semester-hour reading class and a five semester-hour writing class. All students were enrolled in both classes as it was required for them to take the two classes during the same semester. Originally, there were 82 students enrolled in these classes, but 18 students dropped out of the program before the experiment began. This is a typical dropout rate for a developmental class. In addition to this, four students whose native language was not English and two learning disabled students were included in training as a courtesy but not included in the research sample because their writing ability was much less proficient than the typical student enrolled in these classes.

Students were placed into these courses based on an English placement examination. This consisted of the Assessment and Placement Services for Community Colleges writing test(APS) Form B (Educational Testing Service, 1985),

the Stanford TASK reading test Form II - A (Gardner, Callis, Merwin & Madden, 1972), and a writing sample which was an essay written by the student in response to a question written by the English faculty. Each student was placed in a level of English by an English department faculty member based upon the entire examination.

The subjects in this study placed above the lower level of a two tiered developmental English program but were judged as not yet ready for regular freshman composition. Students who are placed in the lowest level of the program are native speakers who have problems writing sentences and score below the 50th percentile on the APS writing test and below the 34th percentile on the Task reading test. There are separate courses for students whose second language is English (ESL) and are in need of developmental work so only ESL students whose reading and writing proficiency approximates that of typical developmental English students are supposed to enroll in this program. However, as previously mentioned, even these higher level ESL students were eliminated from the population included in this study because their writing ability was not equivalent to that of the sample population.

In general, students who enroll in this upper level developmental course score between the 34th and 66th percentile on the Task reading test and between the 50th and the 70th percentile on the APS writing test. However, student

placement may be adjusted by the English faculty based upon the student's essay. These upper-level developmental students are expected to be able to write understandable sentences. However, they lack the ability to write essays that demonstrate the unity, coherence and correct grammar judged necessary for entry level competence in freshman composition.

Materials

Six expository texts were used in this study. They were approximately equal in length (1225-1442 words, 98-116 lines). According to the Fry (1978) Readability Formula, the reading levels of the texts range from 9th through 10th grade with the exception of "Hypnosis" which is at the seventh grade level. The subjects of this study have been informally judged to read at levels between the 9th and 10th grade which was a primary factor in choosing articles at these grade levels. There is good agreement in the readability level of the articles chosen for training except for the "Hypnosis" article which is also adequate for training purposes because its length is equivalent to that of the other selections. During the experiment it appeared to be no easier to summarize than the other articles. Although the readability levels of these selections are below freshman level, they are somewhat challenging in content.

The articles chosen for training were taken from the book Breaking Through College Reading, written by Brenda D. Smith,

published by Scott, Foresman and Company (1987). Breaking Through College Reading is a reading improvement workbook which had previously been used for the kind of classes involved in this study and considered as appropriate instructional material for these students by the developmental English faculty. The articles in Breaking Through chosen for summarization have been taken verbatim from college textbooks and are included in this workbook so that developmental students can obtain practice reading college texts before they take college courses for credit. "Hypnosis" and "What Makes Small Groups Work Best" were slightly reorganized for this study to make the structure more apparent to students.

Summary scripts of these texts were prepared by the researcher as well as two other qualified reading professors. This was accomplished by writing one or two sentences covering the macro-propositions (the most general statements one can make about the text) of the articles, and one sentence describing each of the most general propositions at the topic-heading level (ideas at the second level of importance). Propositions that further described the topic level propositions were also included (propositions at the third level of importance). Propositions below the third level of importance were only included if they were necessary to clarify a previously stated proposition. For purposes of this study, "a proposition expresses a state or action and the

entities involved in that state or action" (Weaver, 1979, p. 7). For example, "One type of mistake is failure to listen." was considered to be one proposition. After each team member produced summaries independently, summaries were compared for content, and discrepancies were resolved in conference.

These summary scripts were approximately 250 to 300 words. They were given to students after they had written their own summaries. Summary scripts were written in outline form in order to demonstrate text structure to students, but students were asked to turn in their summaries in essay form. The model summary scripts used for training and the points allotted for each proposition on the summary writing posttest appear in Appendix C of this report. The articles for this study were used in the following order:

1. Becoming Healthy - an article from a psychology text explaining how to achieve psychological health.
2. Hypnosis - an article from a psychology text describing what scientists understand about hypnosis.
3. Motivating Yourself - an article from a psychology text explaining how people can use motivation theories to perform better in the work place.
4. What Makes Small Groups Work - an article from a communications text explaining how a small group

can accomplish its goals.

5. Marketing Research - an article from a marketing text explaining the value of marketing research.
6. Three Common Human Relations Mistakes (the summary writing posttest) - an article from a psychology text describing the types of human relations mistakes made in the workplace.

Instrumentation

The Culture Fair Intelligence Test Scale 3 (Institute for Personality and Ability Testing, Inc., 1963) is a group test developed to yield a measure of general intelligence for normal adults and can be administered in 15 to 20 minutes. The subjects in the sample that was used for this study tend to come from culturally diverse backgrounds. In order to assess thinking processes rather than exposure to content, this test measures a subject's ability to make judgments about graphics representing series, classifications, matrices and conditions. Scale 3 was standardized on 4,328 subjects from various parts of Great Britain and the U.S.A. Subtest intercorrelations with Spearman's g (computed for high school freshmen, sophomores, juniors, and seniors and young adults) range from .53 to .99 on American samples and from .78 to .83 on French samples. No difference in scores was found between American and British subsamples at any age level. Full test correlations are reported as .59 with the American Council on

Education Psychological Examination for College Freshmen, .84 with the Wechsler-Bellevue, from .56 to .85 with the Stanford-Binet and an average of .73 with the Otis group test. Split-half and test-retest coefficients exceeded .80 in most samples tested (Buros, 1965).

The scoring system used for the summary writing posttest and again for the delayed recall test has face validity in that three qualified reading specialists have agreed on the content of this summary script. This technique is found throughout the literature on summarization. The three specialists independently analyzed the text used for these tests and reported substantively identical ideas for the first two importance-levels. There were differences in a few propositions at the third importance level, but these differences were easily resolved in conference. Also, a random sample of 50% of the final summaries was rated by a second reader. Inter-rater reliability was found to be .94.

A composite score of Part One and Part Three of The Diagnostic Reading Test Form B for college freshman year was used as a part of posttraining assessment (The Committee on Diagnostic Reading Tests, Inc., 1968). Part One measures general reading by asking twenty comprehension questions about a 126 line article. After students read the article for eight minutes they are required to answer twenty questions about the article in seven minutes without having access to the article.

Part Three measures comprehension by requiring students to read four selections, each consisting of approximately 25 lines. The material is similar to that found in social studies and science textbooks. Each selection is followed by five questions based on the reading material in the selection. Part Two, a vocabulary subtest, was not normally administered to students in developmental classes and therefore was not used in the present study. Another reason for not administering the vocabulary subtest was that the researcher is primarily interested in the relationship between summary writing ability and general reading comprehension (as measured by a standardized reading test) as opposed to the relationship of summary writing ability to vocabulary knowledge. Part One and Three of this test both measure comprehension ability.

The Diagnostic Reading Test was used in the present study because it was already in place as an in-class measure of students' reading ability and consequently would not disrupt normal procedures. This helped secure departmental cooperation for the experiment. In addition to this, the test has been found useful by developmental English faculty because the distribution of developmental student scores on this test tends to be broader than on other standardized reading tests, providing finer differentiation in tested ability levels. For this reason, The Diagnostic Reading Test has been found to be a useful measure of students' reading ability at Northern

Virginia Community College, Alexandria Campus.

The median of reliabilities for section 1 of this test is reported as .74 computed by the test-retest technique with reliabilities reported on populations of grades 7-12, each sample with an approximate n of 100 drawn from a single grade (The Committee on Diagnostic Reading Tests, Inc., 1968). Unfortunately, there are no reliability scores for section three alone, but the median of reliabilities for parts one and three together (all comprehension items) is .83. The average validity reported for Form B is .59 for part one and .44 for part three using Flanagan's table for estimating biserial r.

Phases of the Study

There were three phases to this study. The first phase consisted of pretraining activities. These activities included training in paragraph analysis delivered to students in both the control and experimental groups. Students in both groups also took the Culture Fair Intelligence Test prior to training.

The second phase of the study consisted of a five week training program. Training differed for students depending on group status. Students in the experimental group were taught a hierarchical, top-down summarization procedure. Students in the control group were taught other methods of reading improvement.

The third phase of this study involved posttraining

testing. The first measure taken was a summary writing posttest administered to students in both groups one class period after training was completed. One class period after this, The Diagnostic Reading Test was administered to students in both groups. One week after the summary writing posttest was completed, students in both groups took a delayed recall test for which they were asked to recall material they previously read for the summary writing posttest.

Pretraining Procedures

Prior to conducting the experiment, all students enrolled in classes participating in the study were given three one hour and fifteen minute sessions of instruction in locating and inventing topic sentences of paragraphs. This type of instruction is typically included in college developmental reading classes and consequently would have been difficult to withhold from students. In addition, it was postulated that this training would help experimental group students avoid becoming distracted by textual information located below the topic sentence level when summary writing training was delivered. It was considered unlikely that this training in restating topic sentences would contaminate the experiment by assisting control group students when they attempted to summarize on the summary writing posttest because it did not direct students to attend to levels of text beyond the paragraph. Therefore, this pretraining activity was

considered generally beneficial to the study.

After being trained in paragraph analysis, the Culture Fair Intelligence Test was administered to all students in order to obtain a measure of cognitive abilities. This was necessary for subsequent analysis as described in the Method of Analysis section of this chapter. A description of this group administered test was previously described in the Instrumentation section of this chapter.

After administering the Culture Fair test, the researcher randomly assigned students to either a control or an experimental group. This was accomplished in the following manner. For each class, the last name of each student was placed in alphabetical order and each student was alternately assigned to either group. From this time until the summary writing posttest was administered, both groups met separately.

Overview of Training Procedures

Training sessions for both groups were conducted in the natural classroom setting by their regular classroom teacher who was also the researcher. Each training session lasted for one hour and fifteen minutes (one regular class period, once a week). When the experimental group received summarization instruction, control group students were sent to the reading laboratory to work on reading journal assignments and were supervised by a learning laboratory instructional assistant. When the control group received instruction, experimental

group students were sent to the laboratory to work on reading journal assignments. Both control and experimental group students had the same classroom instructor. Detailed lessons were prepared for each session so that instruction for each group was delivered in the same careful manner. This decreased the possibility that delivery of instruction influenced the pattern of results. Since both groups were writing, writing per se should not have accounted for any differences found.

Students in either group who missed a training period were required to meet with the instructor during his office hours to make up training sessions, or they did not receive a passing grade for the course. No student missed so many days that the proper sequence of instruction could not be maintained, and therefore they continued to be counted as subjects.

Each training session employed a four-step instructional strategy which allowed for learning differences among students and provided additional reinforcement for those students who chose to review what happened during the session. This was the case for both control and experimental group instruction. Those stages were: 1) practice performing a task; 2) immediate feedback after practice; 3) handouts to study for homework; 4) comments written by the instructor about how well students performed the task which were given to students one

session later (the Training section of this chapter and Appendix A include a more thorough description of these procedures).

Training began one class after the Culture Fair test was given. The experimental group was taught a summarization procedure. They practiced by writing a summary of one article each week for five weeks. After writing this summary, they received instruction on how to locate or invent information for summary inclusion.

The control group read the same five articles in the identical order as the experimental group and received instruction related to reading them for an equal amount of time. Instead of being taught summarization, they were taught several other techniques for active involvement in reading by completing a series of exercises related to the texts they read. These exercises included preview skimming, predicting what information was contained in the article, linking the content to prior knowledge, writing a purpose statement for reading the article, writing a general comment about the information contained in the article, and relating the information in the article to something personal. Control group students also completed a short answer comprehension test about each article and a vocabulary test on difficult words found in each article. The short answer tests contained one question asking students to choose an appropriate thesis

statement for the entire article.

Experimental group subjects were given summary scripts at the end of each session and a copy of the summaries they had attempted with instructor feedback and a letter grade written on their summaries one session later. This enabled students to study the process for homework. Control group subjects also had their work (the previously described exercises) returned to them one session later with comments written by the instructor. Short answer tests were graded with a number grade and written responses were given a letter grade. Control group students could also study the training they received for homework.

Experimental Group Condition

The training sessions for the group being taught summarization had similar formats, although each session had some variation. For the first 50 minutes of class, students were asked to write a summary of an article using paper with a carbon attachment. The researcher collected the original summaries in order to prevent students from changing their summaries before he wrote comments about their work. This copy of student written summaries was returned to students at the next session with detailed written comments and a letter grade. During the last 20 minutes of class, the instructor delivered instruction on how to write a summary of that article. Students kept the carbon copies of the summaries

they had just written so that they could compare their attempts with the information presented by the instructor.

Delivery of instruction was conducted in the following manner. The instructor pointed out all clues in the text that indicate the macro-level propositions that should be included in a summary. The instructor prompted students to suggest sentences that might include these propositions. Second, the instructor taught students to read each section of the text (as signaled by a topic heading) and write one sentence describing the most general idea stated in that section. If students saw sentences that stated the most general ideas of the topic section, they underlined them and these sentences were used in the summary. If students saw words or phrases that could be used in invented sentences, these too were underlined. Although most topic sections contained a sentence explicitly stating the most general idea of that section, students were taught to invent a sentence for each topic section that did not have one explicitly stated and to write those sentences on draft paper. Students were taught to locate or invent sentences at the topic level by asking two questions. The first question was "How does this topic relate to the thesis statement?" (macro-level propositions). The second was "What is the most general statement the author is making about this topic?"

After writing a general statement at the topic level, the

instructor asked students to locate sentences at the third level of importance (sentences which set forth more specific information about topic level statements). If sentences at this importance level could not be located, the instructor told students to find phrases in the text which would help them invent sentences at this level.

After this, students went through their drafts and compared what they had written with what was discussed in class. A model summary of each article was given to students at the end of each training session. Student generated summaries were given back to students one session later with general comments and a letter grade written by the instructor. For homework, students were asked to read and think about the comments written by the instructor and to compare their summaries with the model summaries prepared by the instructor as well as with the original texts.

Control Group Condition

As with the experimental group, the format for each training session for control group students was similar. These students read the same articles as the experimental group students, but the instruction they received was different. Control group students were asked to complete a series of exercises that related to the articles they had read. All the exercises used for the control group training also had been taken from Breaking Through. They were the

exercises that accompany the articles used in that text. The purpose of training for the control group was to give reading improvement instruction that would not teach summarization skills. This enabled the researcher to compare the posttest results of both groups to see if training in summarization had an effect on students' ability to summarize text.

The training for control group students was as follows. For the first 50 minutes of class, students read an article and completed a series of exercises related to that article. Students were asked to skim over the article before reading it and were then asked to respond in writing to several written questions or statements. These written responses were short, about one to three lines. The exercises were designed to train students to make predictions about what they read and to start linking new information to knowledge they already had.

After responding to these questions, students read the article. Next, they were asked to complete a ten-item, multiple choice comprehension test about the selection. They were then asked to write a paragraph based on a reflective question (this was not a summary). This reflective question was designed to help students relate the new information they just received to their own experiences. After this, students were asked to write a paragraph applying some of the knowledge obtained from the article to a new situation. The final

activity was a ten-item, multiple choice vocabulary test consisting of words taken from the article.

For the next 20 minutes of class, the instructor led a discussion designed to encourage students to relate information in the selection to prior knowledge they might have about the topic. The instructor asked a few volunteers to read their previously written responses to the group. From time to time, the instructor made appropriate comments and asked questions to stimulate discussion. The instructor did not give the correct answers to the short answer questions because he did not want students to change their answers before he graded them. At the end of the session, the instructor collected the work students had completed during the session.

At the beginning of the next session, the instructor returned the work completed during the previous session with written comments about the responses students had made to the prediction, reflection and application questions. In addition to this, he placed a letter grade on these booklets indicating how well he thought students had responded to the questions. He also corrected the short answer vocabulary and comprehension tests and gave a number grade for these tests. At this point, he answered any questions students had about their written responses and short answer tests. After answering these questions, the next selection was handed out

and the process began again with a new article and the exercises that accompanied it.

Summary Writing Posttest

A posttest measuring the ability to summarize an article was given to both control and experimental group students one class period after the training program had been completed. For this test, students were asked to write a summary of the article "Three Common Human Relations Mistakes." They had not previously read this article. All students were given a brief description of a summary so that control group students, who had no training in writing summaries, had an appropriate understanding of what was expected of them. The passage was available to students when they wrote their summaries.

The researcher explained that he was interested in his students' ability to write summaries. He stressed that this was part of their graded course work so they should try to do the best they could, but that students in both groups would be evaluated by different criteria because they had learned different techniques during the last five weeks. He explained that a summary is a shortened version of a text. It restates the main ideas of a text but does not include all the minor points. He instructed students not to include their opinions about the text or their reactions to it. Students were told they were allowed to use phrases or even complete sentences from the original text as well as their own paraphrases in any

combination they considered appropriate. They were told to make their summaries approximately 250 to 300 words. After these directions were given, the subjects were told to read the article all the way through at least once. They were then told that they could refer to the text while they summarized as much as they wished. They were encouraged to mark the text, take notes and plan by making a rough draft or an informal outline. Students were given one hour to complete the task.

Standardized Reading Test

Form B of the Diagnostic Reading Test was administered one class period after the summary writing posttest was completed. This measure was taken in order to determine whether there was any relationship between summary writing posttest scores and standardized reading test scores. If such a relationship could be demonstrated, it would also be possible to determine whether one type of training facilitated better performance on this test.

This test was previously described in the Instrumentation section of this report.

Delayed Recall Test

One week after completing the summary writing posttest, both experimental and control group students were asked to take a delayed recall test. This consisted of asking students to write a summary of the article they summarized for the

posttest. They were told to include as much information from the article as they could remember. They did not have access to the article during this task, nor had they seen the article after completing the posttest. They were not previously informed that they would be required to perform this task. A set of cue words was provided as an aid to student recall. Directions for the delayed recall test can be found in Appendix C.

Scoring Summary Writing Posttest And Delayed Recall Test

The summary writing posttest and the delayed recall test were scored in the following manner. Students received 10 points for reproducing the macro-level proposition present in the original text. Students also received 10 points for each topic-level proposition correctly reproduced in their summaries. Since there were three topic heading level propositions in this particular text, it was possible to obtain a total of 40 points for correctly reproducing all propositions at the first two levels of importance.

Students could receive a total of 20 points for each set of propositions at the third level of importance correctly reproduced in their summaries. Since there were three sets of third importance level propositions in the original text, it was possible to obtain a total of 60 points for correctly reproducing propositions at this level of importance. There were 10 propositions at this level of importance in this

particular text. However, not all three topic sections of text had the same number of propositions at this level. Therefore, the twenty points allotted for each set of propositions were more or less equally divided among the propositions at this level. In general, students could obtain four to seven points for each proposition at this level and could receive 10 points for propositions at the two higher levels of importance. It was appropriate to weight the test in favor of higher level propositions because it is essential to include high importance level information in a condensed version of a text.

Partial credit was also given for including idea units found within propositions at all levels. The entire summary was worth 100 points. The "Key For Scoring Three Common Human Relations Mistakes" found in Appendix C shows the exact number of points awarded for each idea unit on the posttest. Students did not receive credit for information they included in their summaries that did not match the prepared script, nor were points subtracted for including such information. A second scorer was trained to score summaries in order to measure the reliability of this scoring procedure. A random sample of 50% of the summary writing posttests were scored by this second rater. Inter-rater reliability, summary writing posttest results and delayed recall results are described in Chapter Four.

Method of Analysis

The hypotheses were answered by multiple regression analysis applied to designs in which both continuous and categorical variables are used. Independent and dependent variables vary according to each specific hypothesis. All statistical formulas used for the analyses were taken from Multiple Regression in Behavioral Research (Pedhazur, 1973). The formulas used to compute the appropriate F value calculated to test each hypothesis are stated in Chapter 4 of this report.

Hypothesis One

$$H_0: \mu_H \leq \mu_L$$

$$H_1: \mu_H > \mu_L$$

Among the students who received summarization training, summary writing posttest scores of those with high cognitive abilities are equal to or less than those with low cognitive abilities. In this analysis, the dependent variable was summary writing posttest scores and the independent variables were group status and cognitive ability scores. This hypothesis was analyzed by determining whether the slopes of the regression lines computed for experimental and control group scores were statistically equal. Slopes that are statistically equal indicate that two regression lines are parallel. Parallel regression lines would indicate that there is no interaction effect between cognitive abilities and group

status on summary writing posttest scores while nonparallel lines would indicate that an interaction effect exists.

Hypothesis Two

$$H_0: \mu_E \leq \mu_C$$

$$H_1: \mu_E > \mu_C$$

Scores of experimental group students are equal to or less than scores of control group students on the summary writing posttest. In this analysis, the dependent variable was summary writing posttest scores and the independent variables were group status and cognitive ability scores. This hypothesis was analyzed with the following procedures. First it was necessary to determine whether cognitive abilities had a significant impact on summary writing posttest scores. This was accomplished by testing whether the common regression coefficient for both groups was different from 0. Once it was determined that cognitive abilities did not have a significant impact on summary writing posttest scores, it was necessary to determine whether group status had a significant impact on summary writing posttest scores. Once it was concluded that this was the case, it was possible to decide whether the intercepts of control and experimental group regression lines were significantly different. Testing the difference between the intercepts of the two groups was equivalent to testing whether or not one of the treatments was more effective.

Hypothesis Three

$$H_0: \mu_E \leq \mu_C$$

$$H_1: \mu_E > \mu_C$$

Scores of experimental group students are equal to or less than scores of control group students on the delayed recall test. In this analysis, the dependent variable was delayed recall test scores and the independent variables were summary writing posttest scores and group status. This hypothesis was analyzed with the following procedures. First it was necessary to determine whether summary writing posttest scores had a significant impact on delayed recall scores. This was accomplished by testing whether the common regression coefficient for both groups was different from 0. Once it was determined that summary writing posttest scores did not impact on delayed recall test scores at the desired significance level, it was necessary to determine whether group status had a significant impact on delayed recall scores. Despite the fact that it was concluded that group status did not impact on delayed recall scores at the desired significance level, it was possible to decide whether the intercepts of control and experimental group regression lines were significantly different. Testing the difference between the intercepts of the two groups was equivalent to testing whether or not one of the treatments was more effective.

Hypothesis Four

$$H_0: \mu_E \leq \mu_C$$

$$H_1: \mu_E > \mu_C$$

Scores of experimental group students are equal to or less than scores of control group students on the Diagnostic Reading Test Form B. In this analysis, the dependent variable was standardized reading test scores and the independent variables were summary writing posttest scores and group status. In order to test this hypothesis, the proportion of variance in reading test scores accounted for by the main effects of summary writing posttest scores and group status and the interaction between them was calculated to determine whether this model could be used to interpret the data. The lack of a meaningful proportion of variance accounted for by the independent variables caused the analysis to be terminated at this point.

Chapter 4

Results

Introduction

The general purpose of this study was to determine the value of training community college developmental English students to write summaries of articles taken from college texts. In order to accomplish this, students were randomly assigned to a control or treatment group. Students in the treatment group were taught how to write summaries over a five week period. Students in the control group were given vocabulary and comprehension instruction. Students in both groups were given instruction using the same five articles.

Before the training period, both control and experimental group students were given the Culture Fair Intelligence Test in order to provide a measure of cognitive abilities. At the end of the training period, both control and experimental group students were given a researcher-devised summary writing posttest in order to test their ability to write summaries. They were also given The Diagnostic Reading Test Form B to see if training had an effect on general reading ability. One week after training, both groups of students were also given a researcher-devised delayed recall test to determine how much they remembered from the summary writing posttest article.

They were not told in advance that they would be tested, and they did not have access to the article after taking the posttest or during the time of the delayed recall test.

Hypothesis one predicted that among the students who received summarization training, summary writing posttest scores of students with high cognitive abilities would be equal to or less than those with low cognitive abilities. Hypothesis two predicted that scores of experimental group students would be equal to or less than scores of control group students on the summary writing posttest. These two hypotheses were answered by computing regression models with the summary writing posttest scores as the dependent variable and group status and cognitive ability scores as the independent variables.

Hypothesis three predicted that experimental group students' scores would be equal to or less than control group students' scores on the delayed recall test. For this analysis, regression models were computed with the delayed recall test as the dependent variable and group status and summary writing posttest scores as the independent variables.

The fourth hypothesis predicted that experimental group students' scores would be equal to or less than control group students' scores on The Diagnostic Reading Test. For this analysis, regression models were computed using The Diagnostic Reading Test as the dependent variable and group and summary

writing posttest scores as the independent variables.

The above hypotheses were analyzed by procedures outlined by Pedhazur (1973) in Multiple Regression in Behavioral Science Research. All formulas for the analyses were taken from this source. The SAS REG computer program which fits least-squares estimates to linear regression models was used in these analyses. All critical values reported in this chapter are those used for a one-tailed test of significance.

Group Means and Standard Deviations for Dependent Measures

Descriptive statistics for the summary writing posttest, the cognitive abilities test, the delayed recall test and The Diagnostic Reading Test were computed (N=28 for the control group, N=30 for the treatment group). These statistics were based on all scores obtained for each subject in the study.

The mean score for control group students on the summary writing posttest was 49.29 (SD=19.79) with a minimum value of 12 and a maximum value of 82 out of 100 possible points, while the mean score for the treatment group was considerably higher at 74.10 (SD=9.58) with a minimum score of 53 and a maximum score of 90. Only 8 treatment group students (27%) scored below 70% on the posttest while only 2 students (7%) scored below 60%. There were 24 (86%) students in the control group who scored below 70% on the posttest and 16 (57%) control group students who scored below 60%. There were 11 (37%) students in the treatment group who scored 80% or above on the

posttest while only 1 member of the control group scored above 80%.

TABLE 1

SUMMARY WRITING POSTTEST SCORES

	Low Score	High Score	Mean Score	Below 60%	Below 70%	Above 80%
Control N=28	12	82	49.29	16	24	1
Treatment N=30	53	90	74.10	2	8	11

The difference between group means on the delayed recall test was less marked. The control group mean was 20.11 (SD=12.91) with a minimum score of 0 and a maximum score of 51 out of a possible 100 points, and the treatment group mean was 26.93 (SD=14.23) with a minimum score of 0 and a maximum score of 55.

It was expected that the group means of the Culture Fair Intelligence test and The Diagnostic Reading Test would be similar due to random assignment to group. This proved to be true with the control group mean for cognitive abilities being 22.07 (SD=5.09) with a minimum score of 12 and a maximum score of 31 out of a possible 50 points, and the treatment group being 23.43 (SD=4.60) with a minimum value of 15 and a maximum value of 35. The mean reading test scores for both groups were not far apart, 26.21 (SD=6.87) with a minimum value of 10 and a maximum value of 40 out of a possible 40 points for the

control group and 25.33 (SD= 4.92) with a minimum value of 11 and a maximum value of 36 for treatment group students.

A second reader scored a random sample of 50% of the summary writing posttests in order to insure interrater reliability. This was necessary due to the subjectiveness of matching students' summaries to the summary key. Random selection of summary writing posttests was accomplished by putting the names of all students in both groups in alphabetical order and selecting every other name for a second reader to score. The Pearson Correlation Coefficient between ratings by the first and second reader was .94 which indicated a high degree of accuracy for this kind of measure.

Hypothesis One

Hypothesis one predicted that among students who received summarization training, summary writing posttest scores of those with high cognitive abilities would be equal to or less than those with low cognitive abilities. The first step in answering hypothesis one was to determine the proportion of variance in posttest scores accounted for by the main effects of group and cognitive abilities and the interaction between them. This was symbolically represented by $R^2_{y.abc}$, where a represented the independent categorical variable group; b represented the independent continuous variable cognitive abilities, and c represented the product vectors (the product of the two independent variables). Y represented the

dependent variable summary writing posttest scores.

$R^2_{y.abc}$ was found to be .4127, meaning approximately 41% of the variance in posttest scores was accounted for by the main effects and the interaction between group and cognitive abilities. This was meaningful within the context of this study. Therefore, the model did fit the data and it was possible to go on to the next step.

The next step in testing hypothesis one was to determine whether there was a significant interaction between cognitive abilities and group status on summary writing posttest scores. If the regression lines computed for treatment and control group scores were shown to be parallel, no interaction effect would have been indicated. Whether or not the two regression lines were parallel was determined by computing an F ratio. This was accomplished by calculating $R^2_{y.ab}$ (the proportion of variance in posttest scores accounted for by the main effects of group and cognitive abilities without the interaction effect) which was found to be .4045. As mentioned above, the proportion of variance with main and interaction effects was represented by $R^2_{y.abc}$ and was found to be .4127. The possibility of interaction was tested by the formula $F = [(R^2_{y.abc} - R^2_{y.ab})(k_1 - k_2)] / [(1 - R^2_{y.abc}) / (N - K_1 - 1)]$ where k_1 was the number of vectors associated with $R^2_{y.abc}$. In this case, there was one coded vector (group), one continuous variable (cognitive abilities) and one product vector (group times

cognitive abilities). Therefore, k_1 equaled 3. The number of vectors associated with $R^2y.ab$ (the coded vector and the continuous variable) was represented by k_2 which equaled 2. The F ratio with 1 and 54 degrees of freedom was found to be .75 which did not exceed the critical value of 2.81 at even the .10 significance level indicating that the slopes of the regression lines for both control and experimental groups were statistically equal. In other words, the two regression lines were parallel. This means that there was no interaction effect between cognitive abilities and summary writing training on summary writing posttest scores. Therefore, hypothesis one was rejected; cognitive abilities had no effect on summary writing posttest scores.

Hypothesis Two

Hypothesis 2 stated that scores of experimental group students would be equal to or less than scores of control group students on the summary writing posttest. Before this hypothesis could be directly answered, it was necessary to determine whether the continuous independent variable cognitive abilities had a significant impact on the dependent variable posttest scores. This was accomplished by determining whether the common regression coefficient for both groups (b_c) was different from 0. For this procedure, the regression coefficient associated with the cognitive abilities test was used as the common regression coefficient for the two

groups because the regression coefficients for both groups were not found to be significantly different (the two lines were found to be parallel). The F test for determining whether b_c was different from 0 was accomplished by calculating $R^2y.a$ which was the proportion of variance accounted for by group and was found to be .4026. $R^2y.ab$, the proportion of variance accounted for by the main effects of group and cognitive abilities without the interaction term, was already calculated to be .4045. The F ratio was tested by the formula $F = [(R^2y.ab - R^2y.a) / (k_1 - k_2)] / [(1 - R^2y.ab) / (N - k_1 - 1)]$ where k_1 was the number of vectors associated with the categorical and the continuous variables (in this case 2); k_2 was the number of vectors associated with the categorical variable (in this case 1). The F ratio was found to be .18 with 1 and 55 degrees of freedom which did not exceed the critical value of 2.80 at the .10 level of significance. Therefore, cognitive abilities did not have a significant impact on posttest scores.

Because it was determined that cognitive abilities did not have an effect on summary writing posttest scores, it then made sense to determine whether one of the treatments was more effective. The design in this step was reduced to one in which only the categorical independent variable group status was used. In order to determine whether group had a significant impact on posttest scores, $R^2y.a$ (the proportion

of variance accounted for by group alone) which was found to be .4026 was tested by the formula

$F = [R^2y.a/k] / [(1-R^2y.a)/(N-k-1)]$ where k was the number of coded vectors used to represent the categorical variable (in this case 1). The F ratio was calculated to be 37.63 with 1 and 56 degrees of freedom which exceeded the critical value of 12.10 at the .001 level of significance. Therefore, it was concluded that group had a significant impact on summary writing posttest scores.

Knowing that group had a significant impact on summary writing posttest scores, it was then logical to decide whether the intercepts of control and experimental group regression lines were significantly different. It is important to note that no interaction effect was observed between cognitive abilities and group status on summary writing posttest scores. Had an interaction effect been observed, it would not make sense to ask whether one of the treatments was more effective than the other along the continuum of the continuous variable cognitive abilities. Testing the difference between the intercepts of the two groups was equivalent to testing whether or not one of the treatments was more effective. $R^2y.b$ (the proportion of variance in posttest scores accounted for by cognitive abilities) was determined to be .0022. The F ratio was calculated by the formula

$F = [(R^2y.ab - R^2y.b) / (k_1 - k_2)] / [(1 - R^2y.ab) / (N - k_1 - 1)]$ where k_1 was

the number of vectors associated with $R^2y.ab$ (the coded vector and the continuous variable, in this case 2); k_2 equaled the number of vectors associated with the continuous variable which was 1 in the present context. The F ratio was calculated to be 37.25 with 1 and 55 degrees of freedom. The critical value for F is 12.13 at the .001 level of significance indicating that there was a significant difference between group scores on the summary writing posttest. Therefore, hypothesis two was rejected; the treatment group scored significantly higher on the summary writing posttest.

Analysis of Scores

An analysis of mean scores showed that treatment group students did better than control group students on almost all macro-level, mid-level and micro-level propositions (see Table 2 for calculated means). Treatment group students scored approximately 3 out of a possible 10 points higher on including the thesis statement and approximately 5 out of a possible 40 points higher on the combined scores of thesis statement and the three mid-level propositions. Out of a possible 10 points on each of the three mid-level propositions, treatment group students scored approximately 2 points higher on proposition 1 and approximately 3 points higher on the second proposition. Treatment group students, however, did not score much higher on the third mid-level

proposition (8.83 versus 8.04).

Similar differences were observed on micro-level propositions. Out of a possible 60 points, treatment group students scored approximately 18 points higher on the combined total of micro-level propositions of all three sections of the text. Out of a possible 20 points for each section, treatment group students scored approximately 2 points higher on micro-propositions on the first section of the text, seven points higher on micro-propositions in the second section and 8 points higher in the third section.

Viewed as approximate percentages of possible scores for each propositional level, treatment group students performed 30% better on macro-level propositions, 20% better on mid-level proposition 1, 30% better on mid-level proposition 2 and the same on mid-level proposition 3. Treatment group students performed 10% better on micro-propositions in the first section of the text, 30% better in the second section and 40% better in the third section. These trends seem to indicate that training helped students on all three propositional levels. They do not seem to indicate that

TABLE 2

CALCULATED MEANS

Macro & Midlevel Propositions						M i c r o l e v e l Propositions			
	TS	1	2	3	Total	I	II	III	Total
T	8.33	9.67	9.33	8.83	27.83	5.2	14.33	16.6	36.13
C	5.36	7.86	6.79	8.04	22.69	3.21	7.14	8.11	18.46
M	10	10	10	10	40	20	20	20	60

KEY: T = Treatment group
 C = Control group
 M = Maximum possible total points

training was more effective at one versus another hierarchical level. Given the greater number of treatment group students who received 70% or better on the total summary scores (73% versus 14% in the control group), it seems that the cumulative effect of training is more dramatic than the effect at any one level.

Hypothesis Three

Hypothesis three predicted that scores of experimental group students would be equal to or less than scores of control group students on the delayed recall test. In order to answer this hypothesis, regression equations were calculated with delayed recall scores as the dependent variable and summary writing posttest scores and group status as the independent variables. The proportion of variance in delayed recall scores accounted for by the main effects of the

independent variables and the interaction between them ($R^2y.abc$) was found to be .1242. That is, approximately 12% of the variance in delayed recall scores was accounted for by the main effects and the interaction. This is marginally significant making the analysis worth pursuing, though with caution.

The next step in answering hypothesis three was to determine whether there was a significant interaction between summary writing posttest scores and group status on delayed recall test scores. This was accomplished by calculating $R^2y.ab$ (the proportion of variance in delayed recall scores accounted for by the main effects of group and summary writing proficiency without the interaction effect) which was found to be .1186. As mentioned above, the proportion of variance with main and interaction effects was represented by $R^2y.abc$ and was found to be .1242. The possibility of interaction was tested by the formula

$$F = \frac{(R^2y.abc - R^2y.ab)(k_1 - k_2)}{[(1 - R^2y.abc)/(N - K_1 - 1)]}$$
 with $k_1 = 3$ and $k_2 = 2$. The F ratio with 1 and 54 degrees of freedom was found to be .3457 which did not exceed the critical value of 2.81 at even the .10 significance level. This indicated that the slopes of the regression lines for both control and experimental group students were statistically equal (the regression lines were parallel). This means that there was no interaction effect between summary writing ability and summary

writing training on delayed recall test scores.

The lack of interaction between group and summary writing ability made it possible to determine whether summary writing proficiency as indicated by the posttest had a significant impact on the dependent variable delayed recall. This was accomplished by determining whether the common regression coefficient for the two groups was statistically different from 0. For this procedure, the regression coefficient associated with the summary writing posttest was used because the regression coefficients for the two groups were not found to be significantly different. The F test for determining whether b_c was different from 0 was accomplished by calculating $R^2_{y.a}$ which was the proportion of variance accounted for by group and was found to be .0611. $R^2_{y.ab}$, the proportion of variance accounted for by the main effects of group and posttest scores without the interaction term, was already calculated to be .1186. The F ratio was tested by the formula $F = [(R^2_{y.ab} - R^2_{y.a}) / (k_1 - k_2)] / [(1 - R^2_{y.ab}) / (N - k_1 - 1)]$ where $k_1 = 2$ and $k_2 = 1$. The F ratio was found to be 3.5938 with 1 and 55 degrees of freedom which did not exceed the critical value of 4.02 at the desired .05 significance level but was significant at the .10 level. Therefore, it was concluded that summary writing ability did not have a significant impact on delayed recall scores, but there was a trend towards significance.

Because it was determined that summary writing ability did not impact on delayed recall scores at the desired significance level, it made sense to determine whether group status had an impact on delayed recall scores. In order to determine whether group had a significant impact on delayed recall scores, $R^2y.a$ (the proportion of variance accounted for by group alone) which was found to be .0611 was tested by the formula $F=[R^2y.a/k]/[(1-R^2y.a)/(N-k-1)]$ where k was the number of coded vectors used to represent the categorical variable (in this case 1). The F ratio was calculated to be 3.6369 with 1 and 56 degrees of freedom which did not exceed the critical value of 4.02 at the .05 significance level but was significant at the .10 level. Therefore, it was concluded that group status did not have a significant impact on delayed recall scores, but there was a trend towards significance.

Despite the fact that group status did not impact on delayed recall scores at the desired significance level, the trend towards significance made it logical to test for a difference between group intercepts. $R^2y.b$ (the proportion of variance in posttest scores accounted for by summary writing ability) was determined to be .1171. The F ratio was calculated by the formula

$F=[(R^2y.ab-R^2y.b)/(k_1-k_2)]/[(1-R^2y.ab)/(N-k_1-1)]$ where $k_1=2$ and $k_2=1$. The F ratio was calculated to be .0938 with 1 and 55 degrees of freedom which did not exceed the critical value of

2.80 at even the .10 significance level. Therefore, hypothesis three was not rejected; there was no difference between experimental and control group scores on the delayed recall test.

Hypothesis four

Hypothesis four predicted that scores of experimental group students would be equal to or less than scores of control group students on The Diagnostic Reading Test Form B. In order to test this hypothesis, a regression equation with Diagnostic Reading Test scores as the dependent variable and summary writing posttest scores and group as the independent variables was calculated. The proportion of variance in reading test scores accounted for by the main effects of summary writing posttest scores and group status and the interaction between them was calculated to be .0626. This means that only 6% of variance of reading test scores was accounted for by the independent variables. This was not enough to be meaningful within the context of this study, and the analysis had to be terminated at this point. Therefore, it was concluded that there was no relationship between summary writing training and standardized reading test scores. This also implied that neither group performed better on the standardized reading test. Consequently, hypothesis four was not rejected.

Chapter 5

Summary and Conclusions

Introduction

This chapter presents a summary of the research experiment conducted for this study as well as a summary of experimental findings. Following a discussion of these findings, the implications for developmental education drawn from the study will be examined. After this, the chapter will describe further research suggested by the present study.

Following the above, further research suggested by the literature is examined. Specifically, the need for research addressing the issue of whether a top-down, hierarchical approach or a summarization rule approach facilitates superior performance in writing summaries is discussed. The relationship of the present study to the literature describing the effects of summarization training on recall of textual information is also explained.

Restatement of Purpose

The general purpose of this study was to establish the value of training groups of community college developmental English students to write summaries of articles taken from college texts. The primary purpose of the study was to assess the impact of training on students' ability to write summaries

when text was longer than 1,000 words. To a lesser degree, the study was conducted to determine whether summary writing training had an impact on other possibly related reading skills.

Significance of the Study

The present study addressed the practical problem of whether developmental students can be trained to write better summaries. The study posed four questions. The first question was concerned with the possibility that students' cognitive abilities had an impact on the results of summarization training. The second question was concerned with the effects of training on students' ability to summarize. Two additional questions addressed the issue of the effects of summarization training on delayed recall of textual information, and the effects of summarization training on students' performance on a standardized reading test.

While a number of researchers have addressed the issue of training students in different populations to write better summaries, they do not address the issue of whether developmental students can be trained to summarize text of over 1,000 words using a top-down, hierarchical approach. Only one study (Day, 1980) measured the effects of summarization training on college students who were both poor readers and writers. Her study measured the effects of training on text that was approximately 500 words in length

and at a lower readability level than the texts used in the present study (and lower than that of texts typically used in community colleges). Furthermore, Day's method of instruction did not employ a top-down, hierarchical approach. In addition to this, when training poor readers and writers, Day's method involved individualized instruction while the present study tested a group method of instruction. Thus, the present study measured a potentially more cost-effective way to train students to summarize more difficult text.

The present study's analysis of the impact of cognitive abilities on the effects of training also adds to current understanding of how to design a cost-effective way to teach developmental students to write better summaries. Neither in studies of well prepared students nor in studies of developmental students has there been direct analysis of the role of students' cognitive abilities in moderating the effects of training. The information obtained from this aspect of the study allows the researcher to make recommendations about how to deliver instruction to various subgroups of students in this population in the most efficient manner.

Summary of Procedures

Fifty-eight developmental students in five reading classes at Northern Virginia Community College's Alexandria Campus comprised the sample in this study. Students in the

sample were judged by English faculty members to lack reading and writing skills necessary for successful completion of freshman composition. They scored between the 34th and the 66th percentile on the Task reading test and between the 50th and 70th percentile on the Assessment and Placement Services for Community Colleges writing test. They were placed in developmental courses on the basis of those scores and on an essay they were asked to write.

Students were randomly assigned to either a treatment or a control group. Treatment group students were taught how to write summaries of textbook articles, while control group students were taught other techniques for active involvement in reading. Both control and experimental group students received training on the same articles. Students were trained using one article each week. Instruction for both groups was for approximately one hour and fifteen minutes per week over a five week period. These articles were approximately 1300 words in length and at the ninth or tenth grade reading level.

Prior to training, students in both groups took the Culture Fair Intelligence Test Scale 3 (Institute for Personality and Ability Testing, Inc., 1963). After the training period, students in both groups took a researcher-devised summary writing posttest, a researcher-devised delayed recall test and The Diagnostic Reading Test Form B (The Committee on Diagnostic Reading Tests, Inc., 1968). The

summary writing posttest and the delayed recall test were scored by the researcher by matching student summaries to a prepared summary key. A second reader scored 50% of the posttests. The Pearson Correlation Coefficient between ratings of the first and second reader was found to be .94.

Summary of the Analysis

The analysis viewed summary writing ability both as an outcome and as potentially an input to other areas of reading (specifically, delayed recall and reading comprehension). To answer the first two questions regarding students' cognitive abilities possibly moderating the effects of summary writing training, and the effects of training on students' ability to write summaries, regression models were computed with the summary writing posttest scores as the dependent variable and group status and cognitive ability test scores as the independent variables. The third question, which asked whether summary writing training had an impact on delayed recall, was answered by computing regression equations with the delayed recall test scores as the dependent variable and group status and the summary writing posttest scores as the independent variables. The fourth question, regarding the effect of summary writing training on students' performance on a standardized reading test, was answered by computing regression equations with The Diagnostic Reading Test scores as the dependent variable and group status and summary writing

posttest scores as the independent variables.

Summary of Findings

Hypothesis one was concerned with whether students' cognitive abilities would moderate the effects of summary writing training. Data analysis showed that no interaction effect between cognitive abilities and group status on summary writing posttest scores was indicated. This was important because had there been an interaction effect, it would not have made sense to determine whether group status or cognitive abilities had a significant effect on summary writing posttest scores because it would have been determined that it was the two variables acting together that had a significant effect on these scores.

Hypothesis two was concerned with whether experimental group students would perform better than control group students on the summary writing posttest. Although this part of the analysis was conducted to determine whether experimental group students outperformed control group students on this measure, it was first necessary to determine whether it was group status or cognitive abilities that had a significant impact on summary writing posttest scores. After determining that it was group status that had a significant impact on the summary writing posttest, it was determined that the intercepts of control and experimental group regression lines were significantly different ($p < .001$) with the

experimental group performing better than the control group. The mean score for the experimental group students on the summary writing posttest was 74.10 while the mean score for the control group students was 49.29. This suggested that the training program caused students in the treatment group to score significantly higher on the summary writing posttest. An analysis of mean scores showed that treatment group students did better when summarizing all three propositional levels, but differences at each propositional level were not as dramatic as their cumulative effect.

The third hypothesis was concerned with whether or not experimental group students would perform significantly higher on a delayed recall test. Because only 12% of the variance in delayed recall test scores was accounted for by both independent variables (group status and summary writing posttest scores), results were interpreted with caution. Further analysis showed that neither group status nor summary writing posttest scores, taken separately, significantly impacted on delayed recall scores, but there was a trend towards significance ($p < .10$) for both measures. Subsequent analysis showed that there was no significant difference between the intercepts of regression lines for both groups.

Hypothesis four was concerned with whether or not experimental group students scored significantly higher on The Diagnostic Reading Test. Regression analysis showed that only

6% of the variance in this test was accounted for by both independent variables (summary writing posttest scores and group status). This was not considered significant enough to proceed with further analysis. Therefore, it was concluded that there was no relationship between standardized reading test scores and summary writing ability or training. This also implied that experimental group students did not perform better than control group students on this standardized reading test.

Discussion

Summarizing text is a task which is difficult for students at many different ability and educational levels. It is especially difficult for developmental students because they may suffer from poor reading and writing skills or because there are other educational deficiencies in their backgrounds. This study suggests that students in the upper-level developmental population can be trained to summarize adequately text of approximately 1200-1400 words at the ninth grade reading level. It seems that students are in need of this training and profit extremely well from instruction.

A surprising finding of the study was that some students in both groups put a "controlling statement" in their summaries. For example, at the beginning of the summary, many students wrote, "There are three common human relations mistakes that damage employee's progress. They are not

listening, understanding the contributions of others, and failure to admit or report mistakes to management." However, they then neglected to repeat the appropriate topic level propositions when they described third importance-level propositions later on in their summaries. When this occurred, the summary scorers gave students credit for including the thesis statement and the first topic level proposition, but credit was not given for including the second and third topic level propositions (see summary writing posttest key, Appendix C). The tendency to include a controlling statement was probably due to instruction students received in their writing classes. Since this added unnecessary length to student summaries and possibly caused them to neglect stating this information in more appropriate places, future training programs in summarization should advise students against this practice.

This study also suggests it is possible that neither the ability to summarize nor training in summarization help students in this population with delayed recall of text when they are not advised that they will be required to perform this task. However, the fact that the delayed recall test approached significance for both factors (taken separately) suggests that some modification of the experiment might produce different results. Because there was a high degree (.94) of interrater reliability between readers of the summary

writing posttest, which was marked in exactly the same way as the delayed recall test, it seems unlikely that lack of significance can be attributed to an unreliable instrument. However, it is possible that the instrument was not adequately designed to test recall ability. It is also possible that the relatively small sample size was responsible for these results and that research with a larger sample might produce a different outcome.

Another possible influence affecting student performance on the delayed recall test was motivation. Although students were informed that the delayed recall test would be a helpful educational experience, they might have been reluctant to try their best because it was administered on the last night of class just before they were informed of their course grades. This unplanned situation occurred because the training and testing took more than seven weeks and time simply ran out. Also, students indicated that they did not take the test as seriously as they might have because they were not informed that they would be tested on the material and felt that a test of this nature was unfair. It was necessary not to inform students that they would be tested because the researcher wanted to test the effects of training when no study method was employed by students. Further research which eliminates the problem of student motivation is needed to clarify this matter.

A final implication of this study is that summarization training does not improve students' general reading ability (as measured by a standardized reading test) more than the other reading improvement techniques tested in this study. On the other hand, students in the treatment group did not obtain lower scores than students in the control group which implies that time spent on summarization training did not adversely effect general reading ability. Since ability to summarize is a skill crucial for success in many academic tasks, and because the training program involved about six hours of instruction, it is important to know that incorporating summarization training in a reading improvement program produces benefits without exacting a problematic cost. It is important to note that, like many standardized reading tests, The Diagnostic Reading Test uses passages with little hierarchical structure, and does not measure students' ability to detect and use expository structure. It is possible that a different outcome might occur should students take a test that more closely approximates the summarization task.

Relationship to Previous Research

Previous research has documented improvement when students in several populations were trained to summarize text using the summarization rule approach set forth by Brown and Day (1980). In contrast to the present study, these rules constitute a bottom-up approach in that they direct students'

attention to lower levels of text (e.g., delete trivial information) before they advise students to work on higher levels of text (e.g., include topic sentences). The top-down approach of the present study is possibly a more effective way to train students when text has more levels of importance than the shorter texts used in previous studies. The present study makes an important contribution to our understanding of whether or not training programs in summarization are effective in that it is the first documented occasion where students who were taught to summarize using a top-down approach were shown to improve in summarization (as opposed to recall) ability. It is also the first time summary writing improvement has been measured when assessment has included levels of importance above the topic sentence level.

There is a striking gap in the relevant literature in that bottom-up, rule training studies typically involve short, simple texts and not much shorter summaries. These studies typically analyzed the effects of training on students' ability to summarize text. In contrast, hierarchical structure studies involve longer texts and teach students to identify central thesis, major concepts, and details closely supporting these concepts. While the top-down approach seemed potentially helpful in summarization training for developmental students, hierarchical structure studies typically analyzed only effects on reading recall, not on

summarization.

The present study is also the first documented case where developmental students learned to write satisfactory summaries. There is only one study in the literature where the quality of summaries written by developmental students was measured (Day, 1980). As was the case with other summarization training studies of this nature, Day's study used the summarization rule approach with relatively short texts for training. Despite this, training produced some less than optimal results. Developmental students were able to select topic sentences for summary inclusion at a level comparable to 10th-grade students and invent topic sentences for summary inclusion at a level below 5th-grade students, which caused Day to conclude that trained developmental students did not write satisfactory summaries.

In contrast, students in the present study seemed to include an adequate amount of high importance-level information as a result of training. While the present study did not attempt to measure the proportion of rule use accomplished as compared to possible use, trained students performed significantly better than untrained students in selecting and inventing propositions necessary for summary inclusion at the top three levels of importance. Furthermore, the summaries that trained developmental students wrote were judged as adequate while this was not the case in Day's study.

Therefore, the present study suggests that developmental students can be trained to write satisfactory summaries.

While it is possible that differences between Day's results and the results of the present study can be attributed to training method, it is also likely that the amount of time devoted to training caused this discrepancy. Students in Day's study were trained individually for approximately two hours, while students in the present study were trained as a group for approximately one hour per week over a five week period. The different outcomes of the two studies suggest that developmental students need a good deal more instruction than that supplied by Day. Results of the present study also indicate that group instruction can be used to train developmental students to write better summaries which is a cost-effective alternative to the previously tested method.

Previous studies, regardless of population or dependent measure (improved recall or quality of the summary) did not determine whether cognitive abilities influenced the results of summarization training. The present study adds to current knowledge by demonstrating that students in the developmental population profited from instruction equally across a range of cognitive abilities. This reinforces the finding that group instruction for most developmental students is a viable alternative to the individualized approach. Some developmental students, categorized as learning disabled,

seemed not to profit from the training program because they included more distortions of textual information in their summaries than typical developmental students. Whether group instruction is a viable approach for other populations is a question future research must address.

There are two areas of research addressing the relationship of summary writing training to recall of textual materials. The first area of research indicates that subjects who are aware of text structure (when no training is delivered) are more proficient at recall than subjects who lack this awareness. The second area of research indicates that subjects who are trained in summarization perform better at recall tasks when summarization training is taught as part of an overall recall strategy. Comments in this section relate the present study to these two areas of research.

Students in the present study who (after training) were more proficient at summarizing did not perform better at recalling text than students who did not demonstrate this proficiency. This outcome differs from previous studies linking these two abilities even when no training was delivered (McGee, 1982; Meyer, 1982a; Meyer, Brandt & Bluth, 1980; Meyer & Rice, 1980). One possible reason for the different outcomes is that texts in those studies were shorter and possibly less demanding than the texts used in the present study. Another possible reason is that those studies were

conducted on other populations. Perhaps the most plausible explanation for the different outcome in the present study is that subjects in previous studies were already proficient at using a structure strategy for encoding and retrieving textual information. The developmental students in the present study were just beginning to use this strategy in writing as a result of training, and most likely did not generalize the summarization strategy to a recall strategy. This often happens when two abilities develop without specific intervention relating one skill to its possible use in another task.

The present study indicates that for students in the developmental population, summary writing training and ability did not significantly impact on delayed recall of textual information. This does not conflict with previous research linking summarization training to improved recall of text because prior studies specifically taught students to study the material as part of the overall task, and this was not the case in the present study. In addition, most prior studies directed students to recall material just after the summarization/study period (one experiment was conducted where students were asked to recall text more than one day after summarization procedures were performed). Also, students in those studies were informed that they would be required to perform a recall task. In the present study, the recall task

that students were asked to accomplish differed from previous studies in that students were asked to recall information from a text they had summarized one week earlier and they were not informed that they would be required to accomplish this task. Therefore, the task and students' expectations differed from previous research.

Nevertheless, the success of study programs incorporating summarization in other populations (Armbruster, et al., 1986; Taylor, 1982; Taylor & Beach, 1984; Bartlett, 1978; Meyer, 1981; Slater & Graves, 1986; Meyer, et al., 1989) caused the researcher to postulate that the combination of cue words signaling sections of text and the attention focused on text structure and content during the summary writing posttest might help experimental group students perform better than control group students on the delayed recall test. The data did not support this hypothesis, suggesting that students were not able to generalize use of the structure strategy employed during the summarization task to its use as a recall strategy. It seems that developmental students need to be taught how to use the summarization strategy learned for the summarization task for information storage and retrieval.

Implications for Education

In this section, implications drawn from the study are discussed. Reasons why summarization training should be incorporated into a developmental English program are

submitted. Further discussion explains why the researcher advocates teaching summarization on a group basis, and why the training period should not exceed five weeks. The need for research investigating the amount of time needed for summarization training is explained. This section concludes with a discussion of a possible modification of the instructional format used in the study.

The major implication of this study is that a summarization program should be incorporated in developmental English programs. This seems evident for several reasons. First, it is an important skill for students to learn because it is often a required skill in many college courses. Second, developmental students are not competent at this task without explicit instruction. This is evident both from the literature that examines students' ability to summarize and the data obtained from this study. Several researchers have found that developmental students not trained in summarization are not proficient at summarizing text even when the task involves summarizing text that is shorter and at a lower readability level than the texts involved in this study. In the present study, students who were not trained in summarization demonstrated a lack of proficiency on the summarization posttest while trained students demonstrated relative proficiency at this task.

Third, this study seems to indicate that students profit

greatly from instruction. Not only did trained students score significantly higher than untrained students on the summarization posttest, but the majority of trained students obtained scores that indicated that they had summarized proficiently. It should be noted that in this case "proficiency" does not mean that students wrote perfectly polished summaries, but that they did include appropriate information in their summaries. Finally, although students trained in summarization did not show greater gains in general reading ability, as indicated by a standardized reading test, they did not perform at a lower level than students who were instructed with other reading improvement techniques. This indicates that students who spent five hours of their instructional time learning to summarize did not lose other skills relating to general reading ability.

Another implication for instruction suggested by the present study is that summarization can be taught to developmental students on a group basis as opposed to the individualized approach tested by Day in her 1980 study. Students in the present study learned to summarize more proficiently than students in Day's study, and they were able to do so on more difficult text. Because it is costly to teach any skill on an individualized basis, there seems to be no reason to advocate the more costly approach. Furthermore, the present study suggests that at least for some period of

time, developmental students of different cognitive abilities should not be separated when receiving instruction. This is seems reasonable because no interaction between summarization training and cognitive abilities was indicated by the data obtained in this study. It is possible that developmental students of higher cognitive abilities may need less instruction than students of lower cognitive abilities, but this information was beyond the scope of the present study.

The present study also suggests that the kind of summarization training tested should probably not exceed five weeks. By the end of the five week training program (in which students were trained to write summaries once a week for approximately one hour and fifteen minutes each week) most students demonstrated relative proficiency. It is likely that more time spent on this task would result in diminishing returns. It is also likely that students should be required to complete at least some of the summarization assignments in class in order to profit adequately from instruction (students were compelled to write all summaries in class for this study). Developmental students are notorious for not completing work at home. It could be that the success of this study resulted from the fact that students were required to write a summary during each training session and were given feedback on their drafts immediately after their attempt, and again one session later when the instructor handed their

summaries back to them with written comments.

Further Research Suggested by The Present Study

In this section, further research suggested by the present study is discussed. Specifically, the value of testing modifications of the training program used in the present study is explained. These include varying the time allotted for instruction, changing the level of difficulty of the training materials or using training materials of varying superordinate structures. The need to develop summarization training programs for other developmental English populations is then explored. This section concludes with a discussion of the need for research addressing the relationship between summarization training and various aspects of reading.

The present study indicates that developmental students can learn to summarize text with relative proficiency when trained for one hour and fifteen minutes each week over a five week period of time. Because five weeks is a long time to devote to learning a particular skill, it would be beneficial to investigate the possibility of varying the time allotted for this type of instruction. One possibility is to compress the five training sessions into a shorter period of time. In the present study, training sessions were deliberately spaced one week apart in order to enable experimental group students to absorb information, as well as to allow time for control group students to receive instruction. However, it may not be

necessary to do this in order to produce results similar to those observed in this study. It is also possible that students (or at least some students) could learn to summarize with fewer training sessions.

A final variation of the time allotted for summarization training worth investigating has to do with the amount of in-class summaries students were required to complete. Allowing students to complete some summaries for homework would allow the training period to be shortened and still allow students to write five summaries as part of their training. While there is no guarantee that students would complete homework assignments in a timely fashion, it is possible that incorporating homework into the training program might produce similar results in a shorter period of time.

Another aspect of the training program worth further investigation has to do with the level of difficulty of the training materials. The texts used for this study were generally at the ninth and tenth grade levels. It is possible that the relative ease of the training materials is what made the program successful. However, it is also possible that students could be trained with more difficult materials. Despite this, the training materials used in the present study were at a higher level of difficulty than materials used in previous summarization training programs. Furthermore, many of the texts used in community college courses are written at

only the ninth and tenth grade levels.

Despite the above, it would be desirable to insure that students transfer skills acquired during summarization training to more difficult material. It is possible that students might not automatically transfer acquired skills when the reading level of text is more difficult, but it is also possible that once students learn these skills on relatively easy material, they might be able to apply them to more difficult text. A third possibility is that a program which at some point increases the text's level of difficulty might prove most beneficial for helping students to summarize more difficult text. Further research is needed to test these possibilities.

An additional area of investigation worth pursuing has to do with text structure. It is possible that gains in summarization ability may not transfer to texts with different structures. For instance, the subheadings in the training texts made the overall structure of the texts somewhat apparent (the training certainly strived to inform students of this strategy). Subheadings aided students in locating the thesis statement as well as in locating or inventing mid-level propositions. It was also true that in all training materials the thesis statement was located near the beginning of the article. It is possible that trained students may not have been able to summarize as well as they did had surface

structure not signaled the deeper structure of text. At some point, students need to be able to summarize text where structure is not as apparent as it was in the training materials employed. An area of investigation worth pursuing is whether or not developmental students can also be trained to summarize text with less apparent structure.

In addition to the above, students need to learn to summarize articles organized with different types of superordinate structures (cause/effect, problem/solution, etc.) than the ones used in the present study. While previous studies have measured the effects of training average readers to summarize articles with these different types of superordinate structures for recall purposes, they have not measured the effects of training on students' ability to summarize, and they do not include developmental students as the population studied. Trained students in the present study demonstrated an ability to summarize texts with a descriptive superordinate structure. Further research addressing the need to train developmental students to summarize texts with different superordinate structures is indicated.

A further area of investigation suggested by this study involves different developmental student populations. This study was delimited to assessing the effects of summarization training on upper-level developmental students whose first language was English. It would be prudent to incorporate some

type of summarization training in lower-level developmental classes. It is possible that a training program similar to the one employed in this study might help lower-level developmental students learn to summarize more proficiently, or it could be that the type of training used in the present study is beyond the capabilities of that population. Either way, further research is needed to clarify this matter, and methodologies need to be developed to help lower-level students learn to summarize text.

Another developmental population often found in community colleges is the English as a second language (ESL) population. It is often the case that classes designed only for these students are offered at community colleges. In addition to offering separate classes for these students, several levels of ESL reading and writing classes are often offered. It is possible that the training offered in the present study might help upper-level ESL students learn to summarize text. It is necessary to examine methods of instruction that will help ESL students at different ability levels learn this skill.

While the central purpose of summarization training was to increase students' ability to summarize, it would be desirable to know if effects generalize to other aspects of reading. As previously mentioned, while the standardized reading test used in the present study measures reading comprehension, the passages used do not have the hierarchical

structure found in the training materials used in this study. Taylor (1984) found that students who read passages averaging about 400 words comprehended prose with certain kinds of structure better when they wrote prose or diagrammatic summaries as opposed to just reading those passages. However, students in her study were not trained to write either kind of summary. Further research on the impact of summary writing training on students' comprehension ability when text has hierarchical structure is indicated.

The present study suggests that research addressing the relationship between summarization training alone (when no study methods are part of training) and recall is needed. Although it is ultimately desirable to encourage students to study material they are required to learn, demonstrating that summarization proficiency alone increases retention would encourage students and instructors to value summarization training. Results of the present study which indicated that the relationship between summary writing training and delayed recall approached significance is encouraging. As previously mentioned, the lack of significance might be due to a small sample size or poor student motivation. It is also possible that the delayed recall test was not adequately designed to test recall ability. Moreover, there are no previous studies that measure the effect of summarization training alone on delayed recall of text. These issues imply that further

research is needed.

Further Research Suggested by the Literature

Researchers have measured the effects of summarization training on students' ability to write summaries when students have been trained using a summarization rule approach. Researchers have also measured the effects of summarization training on recall when students have been trained using a top-down, hierarchical approach. The present study is the first attempt to measure the effects of training students in any population to write better summaries using a top-down, hierarchical approach. Research leaves unclear which approach facilitates superior performance in writing summaries. This uncertainty exists for developmental students as well as for students in other populations. It is also unclear whether the summarization rule technique is effective when text is longer than 500 words because previous studies used texts of that length.

It is also unclear from previous research whether the summarization rule approach or the top-down approach is more effective in helping students perform the difficult summary writing rules of selection and invention. Although previous studies involving these two summarization rules related them to topic sentences, they are general transformations that apply to any level of importance necessary for summary inclusion. Previous research indicates that there is need for

better training in applying these rules. This is true for developmental students as well as for students in other populations. After training in summarization rule use, developmental students satisfactorily used the selection rule less than one-half of the time and the invention rule only 12% of the time. Even junior college writers of average ability were able to apply the selection rule only 76% of the time and the invention rule only 50% of the time (Day, 1980). Although summarization rule training attempts to help students apply these rules, it is possible that the top-down approach may actually be a more effective way to teach selection and invention rules, especially when text is longer than 500 words.

The only study that measured how often students were able to perform summarization rules after training is Day's 1980 study which took the summarization rule approach. It is not possible to make direct comparisons between Day's study and the present one because the present study does not attempt to measure how often students adequately employ summarization rules. However, it is possible to note that in the present study students trained in summarization using a top-down approach performed better than untrained students in selecting or inventing propositions at all three propositional levels. Therefore, further research is needed to clarify the issue of which approach best facilitates selection and invention of

propositions necessary for summary inclusion.

There are two areas of research addressing the relationship of summary writing training to recall of textual materials. The first area of research indicates that subjects who are aware of text structure (when no training is delivered) are more proficient at recall than subjects who lack this awareness. The second area of research indicates that subjects who are trained in summarization perform better at recall tasks when summarization training is taught as part of an overall recall strategy. Comments in this section relate the present study to these two areas of research.

The present study indicates that for students in this population, summary writing training and ability did not significantly impact on delayed recall of textual information when no additional study techniques were taught as a complement to summarization techniques. This suggests that students were not able to generalize use of the structure strategy employed during the summarization task to its use as a recall strategy. Although students were not informed that they would be required to perform this task, it was postulated that the combination of cue words signaling sections of text (on the delayed recall test) and the attention focused on test structure during the summary writing posttest would help experimental group students perform better than control group students on the delayed recall test. The conclusion drawn

from the study is that developmental students need to be taught how to use the summarization strategy learned for the summarization task for information storage and retrieval.

The success of summary writing training coupled with training in study methods for 5th grade students (Armbruster, et al., 1986; Taylor, 1982), 7th grade students (Taylor & Beach, 1984), 9th grade students (Bartlett, 1978; Meyer, 1981), university freshmen (Slater & Graves, 1986) and adults, (Meyer, et al., 1989) indicate that it would be useful to examine whether developmental students can profit from summary writing training when it is incorporated into a study method program.

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Appendix A

The Experimental Condition

Session 1

Before any instruction was delivered, the instructor handed out copies of the article "Becoming Healthy" and asked students to write what they thought would be a good summary of the article on paper that had a carbon attachment that automatically produced a copy of what they had written. Students were told to make their summaries approximately 250 to 300 words long. They had approximately 45 minutes to write their summaries.

There were two reasons for asking students to write this summary prior to any instruction. The first was to help students become familiar with the article so that instruction about what information to include in a summary of that article would be as meaningful as possible. The second reason was to give students information on how well they were able to accomplish this task prior to any instruction.

After this, students were asked to hand in their summaries but keep the copy. This enabled the researcher to observe what students did prior to instruction and to give them written feedback as well as a letter grade one session later on their original summary. Students were then able to make changes on their copy as instruction was delivered during

the second part of the session. This procedure allowed students to compare their summaries with sentences the instructor told them to include in a summary and to obtain feedback one session later on their original summary. This process was continued throughout all training sessions.

At this point, the instructor began instruction by defining a summary. He explained that a summary is a shortened version of a text. It restates the main ideas of a text but does not include all the minor points. He told students that a summary does not include opinions about the text or reactions to it. Students were told that for this task they were allowed to use phrases or even complete sentences from the original text as well as their own paraphrases in any combination they considered appropriate.

Then the instructor explained that there is a process whereby students can learn to write better summaries. He gave them a handout listing the process that would help them. The directions were:

1. Read the entire article to get a general impression of what it is about.
2. Write a thesis statement for the entire article on planning paper. This may be more than one sentence if necessary.
3. Underneath your thesis statement write a sentence for each topic heading describing what that section

is telling the reader. This should be the most general statement you can make about the section. Leave about 10 lines between each statement.

4. Look at each section and write down major points that describe in more detail the statement you made in step 3 in the spaces you left under each statement. You may underline parts of the text if that helps. Remember that often a major point will be the topic sentence of a paragraph but you cannot rely on this. It may be necessary to write several sentences to describe your major point adequately.
5. Copy your summaries onto the paper that you will hand in, making revisions as you do your copying.

The instructor went over these directions in detail. The next step was to model these steps using the article "Becoming Healthy." Students could refer to the summaries they had just completed. The instructor pointed out headings, thesis statements and typographical devices that helped formulate the most general ideas of the selection in one or two sentences. The teacher offered acceptable sentences and had students underline them in their texts.

The instructor then asked students to select or invent a sentence that described the most general idea of each topic section. If no one offered a correct sentence in a reasonable amount of time, the instructor offered one. This procedure

was repeated for sentences giving further information about the general idea of each topic section (third importance-level ideas). When these sentences were found in the text, students underlined them. When sentences had to be invented, the instructor wrote them on the board. It should be noted that most of the textual information necessary for summary inclusion could be located in all training materials. However, it was sometimes necessary to invent all or part of a sentence in order to make the summary complete.

Students were given model summaries and were told to compare them with the original text and their first efforts for homework. The researcher explained that the outline form of the model summaries indicated the levels of importance of the ideas presented in the text. He explained that in this particular article it was necessary to include a fourth level of importance in order to clarify previously stated ideas, but that future summaries might include only the first three levels of importance.

Session 2

Students' copies of "Becoming Healthy" were returned at the beginning of this session with comments written by the instructor. The instructor asked students to compare them with the model summary provided earlier for homework. Students were asked to read "Hypnosis" and write a summary (prior to instruction) on paper that had a carbon attachment.

Students were reminded of the procedures for writing summaries described in session 1. They had 50 minutes to try writing their own summaries. Before delivering instruction on this article, the original student summaries were collected, but students kept their copies. This again enabled students to compare their efforts with sentences the instructor said should be included in a summary of that article. It allowed the researcher to make written comments on the original student generated summary without having to distinguish between what students originally had written and information added after instruction was delivered.

For the remaining 20 minutes of the class period, instruction on how to write a summary of "Hypnosis" was delivered. This time students were asked to point out clues for signaling the macro-level propositions of the article. The instructor provided feedback. Students were asked to underline sentences found in the text that included those macro-level propositions. The instructor told them when their answers were correct. The instructor went through each topic section asking the students for a sentence that described the general idea of that section. He then asked for supporting statements describing the general statement. The instructor attempted to obtain more student-generated sentences than during the first session, but he ultimately gave correct sentences if students failed to do so in a reasonable amount

of time. At the end of the session the students were given a model summary of the "Hypnosis" article. The instructor pointed out that the outline form showed the different levels of importance and that the first three levels of importance should be included in their summaries. For homework students were asked to compare the model with their efforts and with the original text. The first copy of student written summaries with the instructor's comments and a letter grade were returned at the beginning of session 3.

Session 3-5

These sessions had identical formats. By this time, students did not need to be reminded of summarization procedures. They were given 50 minutes to try to write their own summaries on paper with a carbon attachment. The articles used for these sessions were "Motivating Yourself," "What Makes Small Groups Work," and "Marketing Research," respectively. After students attempted to write their summaries, the instructor collected the originals in order to make written comments on this copy of their summaries without having to distinguish between what students originally had written and information students might have added after instruction was delivered. Students were able to refer to their copies during class discussions. They were allowed to ask questions about points they had included in their summaries. The instructor went through each article in the same way as described in

session 2. Before leaving class, students were given the model summary prepared by the researcher and levels of importance as indicated by the outline were pointed out.

The instructor handed back the original copy of student written summaries at the beginning of the next session with his comments on them. These comments helped students see what points they included which were appropriate and what sentences were unnecessary or distorted. The instructor's feedback for each summary was quite specific and detailed. For homework, students were asked to compare the model summary that the instructor provided with the summary the student wrote prior to instruction. Students also were asked to compare the model summary with the original text so that they could understand the structure of each article.

It appeared that each article was equally difficult to summarize in that students took about the same amount of time to summarize each article. Students did not mention that any article was more difficult to summarize than any other. Also, students seemed to write about the same amount for each summary. When questioned, students said that the task was difficult for them even towards the end of the training. However, towards they end of training they mentioned that they were starting to understand how to summarize "a little better" than before training.

The Control Group Condition

Introduction

Students were given a packet with the article to be read and all the exercises described. The pattern of instruction for the control group was as follows: 1) Before reading the article, students were asked to skim the article. They were then asked, "What key ideas do you think will be covered? List Them." Students were expected to answer in writing. The length of their answers was to be about one line. 2) Students were asked, "What prior knowledge can you link to the key ideas in this material? List the links briefly in phrases." Written responses were to be about three lines. 3) A "prior knowledge activator cue" was asked. This question was different for each selection. Written responses were to be about two lines. 4) For each of the selections to be read, students were asked to complete the following sentence: "My purpose for reading this material is to find out..." This response was to be about two lines. Since many of these answers varied from student to student, every response from every student could not be heard orally. However, the instructor allowed a few students to respond to each question orally before going on to the next set of exercises.

After answering prereading questions, students read the entire article. They answered a general question about the article they had just read. This answer was about three lines

and varied according to the article being read. The next exercise was a ten-item, short answer comprehension test about the article. After completing the above, students completed a one-paragraph essay response called a "reflection question." After this they were asked to write another paragraph about the article which simply was called an "essay" question. These questions were different for each article, and neither of these written paragraphs was a summary of the article students had read. The essay questions directed students to write a short paragraph (approximately four sentences) about some aspect of the article. For instance, for the article "What Makes Small Groups Work," students were asked to write a few lines about the most appropriate type of leadership for the classroom and why they thought that type of leadership was appropriate. Both the reflection and the essay questions had students focus on at least some of the key points that would be included in a summary, but they did not direct the students to think about the structure of the entire article. After students had completed these paragraphs, the instructor asked a few students to read their answers to the group, and a short discussion occurred as time permitted. The final exercise was a 10-item, multiple choice vocabulary test covering key words in the article. After completing this exercise students handed in their entire packet. The vocabulary and comprehension exercises are included in Appendix B of this

report.

Students who could not complete their written responses during the session were allowed to complete the exercises for homework. However, most students were able to complete the assignment in the allotted class time. Students who did this were told to hand the exercises back to the instructor by the next training session. The instructor handed these exercises back to the students one session after they were submitted. Students received a number grade for the comprehension and vocabulary tests combined and a letter grade for the short essay parts. The instructor went over all the short answer questions orally with the students after the packets were returned. Students were allowed to keep their packets to study.

This completes the description of the general pattern of exercises that control group students followed. Only the exercises specific to each selection read will be listed under each training session. Unless otherwise noted, the same pattern described above was followed for each control group session.

Session 1

The instructor explained to the students that there are several techniques for improving reading comprehension. These techniques help students become actively involved in reading by helping them to predict what the text covers, to activate

knowledge they already have about the topic being discussed and to reflect upon what they have read.

Students were taught that in order to make predictions about what they read, they must first skim over the article. The instructor told students that skimming involves reading the title of the article, section headings and italicized print throughout the article. He said that they should also read the first sentence under each topic heading. Students were also told to skim for key words or phrases throughout the text.

After skimming "Becoming Healthy," students were asked to write answers to preview questions as previously described. The prior knowledge activator cue was "What do you consciously do to try to keep yourself emotionally healthy?" When they finished reading the article, they were asked to respond to the question "What did you learn?" The reflective response for "Becoming Healthy" was "Explain how your mind can make you healthy and happy. Give examples from your own experience." The essay response for this article was "Discuss how learning can help you achieve good health."

Session 2

Students completed prereading exercises for the article "Hypnosis." The prior knowledge activator cue was "If you were to be hypnotized, what posthypnotic suggestion would you like to receive?" After reading the article, students were

asked to respond to the question "How did prior knowledge provide links to the material?" The reflective response for this article was "Name some of today's positive uses of hypnosis." The essay response students were asked to write was "Describe the process of hypnotizing a person and the possible effects of hypnosis."

Session 3

The article that was discussed during this session was "Motivating Yourself." After skimming the article, students were asked prereading questions with the following question as a prior knowledge activator cue: "What are the motivating factors behind your wanting to make good grades in college and receive a college degree?" The general postreading question was, "Did you achieve your purpose for reading?" The reflective response for this article was "Use examples from each of the five theories to explain how you can motivate yourself to be a successful college student." The essay response for this article was "Discuss why a plastic surgeon would become interested in self-image and motivation."

Session 4

"What Makes Small Groups Work" was the article to be covered in this session. As a prior knowledge activator cue, the question "When have you worked in a small group that you felt was particularly productive?" was asked. After reading, students were asked "How did prior knowledge provide links to

the material?" The reflective response for the article was "Describe three different situations that would call for you to practice each of the three types of leadership." The essay question was "What is the most appropriate type of leadership for a classroom and why?"

Session 5

The last article that was used to train control group students was "Marketing Research." For this session, students completed all exercises in class and handed them in prior to the end of the session. The instructor provided feedback on the answers to short answer questions before the end of this last training session, but after he collected students' packets so that they could not change any answers. The student packets with grades and comments were returned at the beginning of the next session. Prior knowledge was activated by the cue "Why do you use the brand of toothpaste that you use? What would you consider switching to?" Students were asked if they had "achieved their purpose for reading" after they read the article. The reflective response for the article was "Give examples from your own memory that demonstrate the need for use of marketing research." The final essay response was "Discuss how marketing research has shown that consumers do not always desire to buy an improved product."

APPENDIX B

Note: All exercises that accompany the following articles are included by permission of HarperCollins Publishers, copyright 1987.

BECOMING HEALTHY

From Psychology: Introduction to Human Behavior, 1981 by Morris Holland¹

How can you grow and eventually become fully functioning? How can you achieve that ideal stage of psychological health? You cannot be healthy simply by trying to be healthy; you cannot be happy simply by deciding to be happy.

Pleasure, happiness, and self-actualization cannot be effectively pursued; instead, they ensue, or automatically result, from your having satisfied a need, attained a goal, or grown toward health. Your deciding to be happy will not make you happy; happiness follows from what you do.

Three Things to Avoid

You have unpleasant feelings sometimes and this is quite natural. But if your unpleasant feelings are pervasive, unending, and tend to color your whole emotional life, then you want to stop feeling so bad. We are all sometimes blue, but if you are blue most of the time, then you want to change. As you grow toward health, you tend to experience fewer and fewer persistent unpleasant feelings. Three of these unpleasant feelings are doubt, dread, and depression.

Doubt

Self-doubt makes you feel worthless, stupid, and dull. Many persons have excessive doubts about their physical appearance; they consider themselves unattractive, ugly, and unlovable. They then retreat from dating and other interpersonal encounters and remain highly self-conscious about their appearance. Other persons have excessive doubts about their intelligence; they consider themselves uninteresting, ordinary, and dull. They act with great shyness and timidity when among other people, believing that no one would want to listen to their ideas. Excessive self-doubt, in general, comes from a feeling that other people will

1. Reprinted in Breaking Through College Reading, 2nd ed. Smith, Brenda D. Glenview, IL: Scott Foresman & Co. 1987. Included in this report by permission of D.C. Heath and Company.

not find you acceptable in some way; this feeling leads you not to accept yourself. Understanding yourself and others is one way to avoid self-doubt; you will discover that your frailties and fears are not unique. Being loved and prized by someone is another way to escape excessive self-doubt; to be wholly accepted by someone else makes it easier for you to accept yourself.

Dread

Dread is a feeling of anxiety or worry. You feel afraid, but you are not sure why. Dread makes you feel nervous, high-strung, restless, and irritable. The tension that you feel may show up physically in nail-biting, in crying spells, in chain-smoking, in frequent headaches or neckaches, or in chronic fatigue. The persistent feeling of dread is a message, and the message is this: Relax, reduce the pressures in your life, and try to resolve some of your conflicts.

Relaxing is something you may have to practice and learn how to do. Here is something for you to try: Go to a quiet darkened room. Sit or lie in a comfortable position. Begin breathing deeply and slowly while you try to empty your mind of thoughts. Beginning with your feet, tighten and then relax your muscles one by one, until all of the muscles of your body are relatively relaxed. Then close your eyes and imagine yourself floating in a tub of warm water. The pressures of your life can sometimes be reduced by getting away from them for a while--take a break and change your scene. For a change of pace take a walk every day or do some light reading. You can sometimes be helped in working out your problems and conflicts by talking to other people about them. As you listen to yourself, you may gain some insights. The feedback of other people may also give you a new perspective. Expressing your feelings to other people often in itself reduces the tension that you feel.

Depression

When you are depressed, you feel profoundly unhappy, blue, and sad. You are moody and pessimistic; you don't feel that things will get better in the near future. You tend not to do things; your energy level is low. Things that once were significant now seem rather pointless. The persistent feeling of depression is a message, and the message is this: Become active, get to work, begin to be involved. Get a part-time job, start a project, volunteer as a helper in a clinic or community agency, join a club--do something. Depression is the opposite of involvement.

Three Things to Do

What you do and what happens to you are under your control. You are in charge. And what you do will determine whether you grow toward health or whether you stay as you are now. While you cannot attain psychological health by pursuing it directly, you can grow in the direction of health through certain kinds of experiences and these experiences are under your control. Some experiences move you toward health; some move you away from health. To learn about yourself and others, to love and to be loved, and to live actively and productively--all are growth-producing.

Learn

To learn about others you must be involved with them. You must have a relationship with them of mutual trust. For how can I learn about you unless you trust me enough to disclose your "inner self" to me? And how can you trust me unless I am willing to reveal myself to you? You can help me understand myself if I trust what you say about me.

Self-understanding cannot easily be achieved in isolation; other people help us to define who we are. Our impression of ourselves depends upon how other people consistently react to us. My self-understanding and my knowledge of you thus depend upon our relationship. If we do not have a trustful relationship, you may hide yourself from me. You may "mystify" me by trying to create an impression that you are different from what you really are. But if you allow me to know you, then you help me understand myself. Knowing others and understanding yourself leads to self-acceptance. You discover that the qualities in yourself that you have rejected are not unique to yourself; others are very similar to you. And as you are accepted by others, you are led to accept yourself. Self-understanding and self-acceptance are experiences of growth that make possible a state of self-actualization.

Love

Experiences that confirm or validate who you are health-producing experiences. Being loved by another is the most profound validation of your self; for to be loved means that someone knows you, that they accept the way you are, and that they value and prize you. To be loved, and therefore validated, is health-producing because it leads you to know, accept, and value yourself. And if you can do this, you are better able to function in life and more likely to experience a continual feeling of well-being.

The capacity for love is a symptom of health. The ability to love depends upon the extent to which you value yourself, have faith in your own powers, and are not afraid of giving yourself.

Live

Living fully implies involvement with the world. When you actively do things, you experience your self, your power, and your capacity. When you become intensely involved in a job, hobby, cause, or other person, you tend to lose self-consciousness, develop feelings of competence, and invest yourself in something "outside your own skin." You have feelings of purpose and meaningfulness and may taste the satisfaction of what has been called "meaning fulfillment." When you become absorbed in something outside yourself, you begin to experience a kind of self-transcendence, accompanied by a feeling of well-being. Thus the experience of active involvement is a growth experience.

COMPREHENSION QUESTIONS

Answer the following with a, b, c, d, or fill in the blank.

1. The best statement of the main idea of this selection is
 - a. negative and unpleasant feelings are natural but tend to ruin your emotional life
 - b. you can achieve health and happiness by avoiding negative feelings and focusing on certain positive experiences
 - c. in achieving good health, love and learning are more important than money
 - d. pleasure, happiness, and self-actualization result as you grow toward health

2. The author's attitude toward becoming healthy is
 - a. optimistic
 - b. pessimistic
 - c. sarcastic
 - d. sympathetic

3. The author believes that
 - a. happiness can be pursued
 - b. happiness follows positive action
 - c. deciding to be happy can make you happy
 - d. setting realistic goals brings happiness

4. The author suggests that relaxation is a cure for
 - a. self-doubt
 - b. anxiety
 - c. depression
 - d. timidity
5. The author suggests that shyness is primarily a reflection of_____
6. The author's use of "Learn" as an experience refers to
 - a. getting a college degree
 - b. becoming involved in new hobbies
 - c. learning about yourself and others
 - d. always actively pursuing knowledge
7. The author feels that being loved
 - a. is more important than loving
 - b. is not as important as involvement with the world
 - c. is the single key to good health
 - d. gives a feeling of self-worth

Answer the following with T(true), F(false), or CT(can't tell).

8. The author is more concerned with the psychological than the physiological contributions to health.
9. According to the author, involvement and activity help to prevent depression.
10. Shy people can benefit from associating with self-confident, aggressive friends.

VOCABULARY

According to the way the boldface word was used in the selection, answer a, b, c, or d for the word or phrase that gives the best definition.

- | | |
|--|---|
| 1. "unpleasant feelings are pervasive " | 2. "other interpersonal encounters " |
| a. upsetting | a. meetings |
| b. uncharacteristic | b. groups |
| c. surprising | c. friendships |
| d. prevalent | d. circumstances |

3. "have **excessive** doubts"
a. endless
b. needless
c. inordinate
d. inferior
4. "shyness and **timidity**"
a. nervousness
b. meekness
c. unreasonableness
d. inconsistency
5. "your **frailties** and fears"
a. expectations
b. unusual features
c. hopes
d. weaknesses
6. "**chronic** fatigue"
a. habitual
b. unwanted
c. difficult
d. nervous
7. "give you a new **perspective**"
a. interest
b. view
c. tension
d. desire
8. "feel **profoundly** unhappy"
a. slightly
b. briefly
c. deeply
d. frankly
9. "feelings of **competence**"
a. love
b. ability
c. belonging
d. need
10. "a kind of **self-transcendence**"
a. excelling
b. rejection
c. analysis
d. admiration

HYPNOSIS

From Psychology: What It Is/How to Use It, 1978 by David Watson¹

Hypnosis has been known and used for many hundreds of years, since ancient times. But not until the last one hundred years has scientific study begun to help us understand hypnosis.

Being Hypnotized

Different techniques are used by hypnotists. Usually they ask the subject to concentrate on something. The subject has to cooperate. The hypnotist asks the subject to give up some control over the moment-to-moment events in the subject's life and turn over this control to the hypnotist. The hypnotist asks the subject to imagine things under the control of the hypnotist.

Some people are more easily hypnotized than others, some are never hypnotized. Some fall into deep hypnosis readily, most can attain some degree of hypnosis with practice. No one knows clearly why there are these differences. It is possible, however, to predict who will or will not be hypnotized by giving a test of suggestibility. For example, the subject is asked to stand with eyes closed. After a few seconds, the experimenter says: "You're beginning to sway a little bit." Then the experimenter watches to see if the subject sways. (The experimenter must be prepared to catch the ones who really get into it.) People who show some effects from the suggestions of the experimenter are more easily hypnotized.

Can you hypnotize someone against the person's will? Probably not. If the person had a lot of past experience with hypnosis, and you knew what cues set off the hypnosis, you might be able to arrange for the cues to happen and the person would go under. But that would be rare.

The Effects of Hypnosis

Several different things happen when a person is hypnotized. A hypnotized person doesn't make plans or control his or her own actions or thoughts. People in deep hypnosis, for example, don't seem to think anything unless the hypnotist

1. Reprinted in Breaking Through College Reading, 2nd ed. Smith, Brenda D. Glenview, IL: Scott Foresman & Co. 1987. Included by permission of HarperCollins Publishers.

tells them to. People in lighter hypnosis will sit waiting for the hypnotist to tell them what to do. Also, a hypnotized person focuses attention in a very selective way. Things that would normally be distracting, such as a loud noise, aren't distracting. Attention is focused on the things the hypnotist says to focus on.

Hypnotized people are very suggestible. If the hypnotist says, "There's a rhinoceros here, see it," they can see it. If the hypnotist points to a chair and says, "You cannot see this," then they don't see it. Instead of dealing with reality themselves, they allow the hypnotist to tell them what is real and what is not. Hypnotized people will act out roles they usually don't perform. For example, the hypnotist can suggest that the person is really only one year old. The hypnotized person then will crawl around, babble like a baby, and act the way babies are supposed to act. Hypnotized people can be programmed by a suggestion of the hypnotist to forget all they have seen or heard while hypnotized.

Not all hypnotized people will show all these effects. There are different levels of hypnosis. People usually have to practice by being hypnotized several times in order to reach the deeper levels. Hypnosis is not sleep. The brain waves of hypnotized people are like those of people who are awake. If you feel like speculating, consider this: The brain waves of people most easily hypnotized often show right-cortex activation.

Hypnosis is well known for the really dramatic effects that can sometimes be achieved. Surgeons have successfully used it to suggest that the person can feel no pain. They have removed an appendix with no anesthesia. Hypnotists often suggest things such as: "Watch out for that charging rhinoceros." Then the hypnotized subject ducks and runs. The person swears he can see and hear the animal. One hypnotist held up a piece of chalk and said: "This is a burning cigarette." He touched the arm of the subject with it, and a red mark appeared, just as if the subject had been burned. People can often remember things under hypnosis that they can't remember in the normal state. This may be due to their increased focus of attention.

Another effect is gained by making a posthypnotic suggestion, so that the subject does something after coming out of the hypnosis. The subject is hypnotized and told: "After you wake up, watch what I do. When I scratch my ear, jump up and shout: The building is on fire! Then sit down. You won't remember that I told you this. Okay, now when I count to three, wake up." Then later in the middle of a class, for example, the hypnotist casually scratches an ear. Up jumps the subject and shouts: "The building is on fire!" Then the subject looks all around, sees the amused faces, gets

red with embarrassment, and sits down. "Why did you do that?" asks the hypnotist. "I don't know," says the subject.

Are hypnotized subjects faking it? Not in any usual sense of the word "faking." When the subject is acting like a one-year-old, the subject really believes that he or she is one year old. Of course, some people do fake it, but an experienced hypnotist can distinguish them from the truly hypnotized subjects.

Can you use hypnosis to get people to do things they wouldn't do under different conditions? For example, will people violate their own ethical principles? It has happened--not always, not predictably, but in a few cases. Under deep hypnosis a subject pulled a trigger on a gun that would have killed another person if it had been loaded. People have stuck their hands into pits of snakes they thought were dangerous.

Is it dangerous to play around with hypnosis? Yes. It's dangerous because the subject can become emotional or very dependent on you, and you aren't trained to deal with that. Will a person go under and never come out? No.

What's Going on in Hypnosis?

There are several theories. The old one was that hypnosis was a form of sleep, but research has shown this isn't true. Some researchers say: "It's a role the person plays, just like the role of mother, student, or lover. The role has certain things you're supposed to do, and other people expect you to do them. When you're hypnotized, you play the hypnotized role, doing what you think hypnotized people are supposed to do." This may be part of it, but some theories go further.

Hypnosis raises important questions about the organization of the human brain. We know there are levels of organization in the brain. As you read this, for example, a lower part of your brain is regulating your body temperature without your thinking about it. Another part is organizing all these little squiggly patterns on paper into words that make sense. Way up high, you are thinking.

Some theorists have said that what happens in hypnosis is that levels in the brain become disconnected. The subject's conscious level is restricted to the things the hypnotist suggests; nothing else is allowed into that consciousness. If the subject's arm is being hurt, and the hypnotist says, "No, it's not." the subject doesn't experience the pain at the conscious level. It might as well not exist. All we are aware of is what we are conscious of. In hypnosis, goes this theory, the content of your conscious brain comes under the direction of the hypnotist. Why this happens, or how it

happens, is not known.

COMPREHENSION QUESTIONS

Answer the following with a, b, c, d, or fill in the blank.

1. The author's primary purpose in this passage is
 - a. to explain hypnosis and its effects
 - b. to encourage the use of hypnosis for adjustment problems
 - c. to explain why people want to be hypnotized
 - d. to summarize the need for hypnosis in modern society

2. Scientific study shows that hypnotized persons are all of the following except
 - a. highly suggestible
 - b. concentrated in their attention
 - c. asleep
 - d. willingly controlled by the hypnotist

3. The author believes that
 - a. everyone can be hypnotized
 - b. most people can be hypnotized who want to be
 - c. people can be hypnotized who don't want to be
 - d. most people fall into deep hypnosis readily

4. Under hypnosis people have been known to do all of the following except
 - a. act in a manner harmful to their own bodies
 - b. violate their own ethical principles
 - c. never come out of the hypnotic state
 - d. imitate an animal behavior

5. Some theorists believe that a person does not feel pain under hypnosis because _____

6. According to the passage, it can be concluded that
 - a. hypnosis is harmful and should not be used
 - b. hypnosis can be beneficial
 - c. hypnosis has only been used in the last hundred years
 - d. hypnotists are illegitimate hucksters

7. The author implies that a person who is easily hypnotized
 - a. has a vivid imagination
 - b. is less intelligent than one who is difficult to hypnotize
 - c. had inadequate brain regulation
 - d. wants to maintain control

Answer the following with T (true), F (false), or CT (can't tell).

8. Posthypnotic suggestion can make a person engage in an atypical action while not under hypnosis.
9. Hypnosis is more popular in the United States for entertainment than for relief of pain.
10. Hypnosis is an example of mind-over-matter.

VOCABULARY

According to the way the boldface word was used in the selection, answer a, b, c, or d for the word or phrase that gives the best definition.

1. "**focuses** attention"
 - a. applies
 - b. concentrates
 - c. suggests
 - d. recalls
2. "a very **selective** way"
 - a. general
 - b. amateurish
 - c. strict
 - d. discriminating
3. "would normally be **dis-**
tracting"
 - a. diverting
 - b. unsafe
 - c. inspiring
4. "are very **suggestible**"
 - a. sensible
 - b. sensitive
 - c. ignorant
 - d. easily influenced
5. "**babble** like a baby"
 - a. misbehave
 - b. converse intelligently
 - c. make meaningless sounds
 - d. terrible
6. "Feel like **speculating**"
 - a. pondering
 - b. talking
 - c. changing
 - d. remembering
7. "with no **anesthesia**"
 - a. doctor
 - b. mental concern
 - c. sedation
 - d. antibodies
8. "a **posthypnotic** sugges-
tion"
 - a. before hypnosis
 - b. after hypnosis
 - c. during hypnosis
 - d. non-hypnotic
9. "is **regulating** your body
temperature"
 - a. increasing
 - b. decreasing
 - c. controlling
 - d. simplifying
10. "little **squiggly**
patterns"
 - a. straight
 - b. meaningful
 - c. organized
 - d. twisted

MOTIVATING YOURSELF

From Your Attitude Is Showing, 1977 by Elwood Chapman¹

"It is asking too much to suggest that people motivate themselves in the work environment. Motivation should come from the supervisor, special rewards, or the job itself."

Many people would disagree with the above quotation. They would claim that self-motivation is an absolute necessity in many work environments. They would also claim that the more you can learn about motivation the more you understand yourself and, as a result, the more you will be in a position to inspire your own efforts.

Let's assume that you find yourself in a job where things are not going well. You feel stifled and "boxed in." You may, for example, be much more capable than the job demands. Perhaps too, the pay and benefits are only average, your immediate supervisor is difficult to deal with, and some other factors are not ideal. Even so, you consider the organization a good one and you recognize that by earning promotions your long-term future can be excellent.

How can you inspire yourself to do a better-than-average job despite the temporary handicaps? How can you motivate yourself to live close to your potential despite a negative environment? How can you keep your attitude from showing? How can you keep from injuring important human relationships?

There are many theories or schools of thought on why people are motivated to achieve high productivity on the job. Most of these are studied by managers so that they will be in a better position to motivate the employees who work for them. In this chapter we are going to reverse the procedure. We are going to show you how to motivate yourself. If your supervisor can be trained to motivate you, why can't you learn to motivate yourself?

Theory 1: Self-Image Psychology. This is frequently called the Psycho-Cybernetics School. The proponent of this theory is Dr. Maxwell Maltz, a plastic surgeon. The basic idea is that in order to be properly motivated to achieve certain goals an individual must recognize the need for a good self-image. Dr. Maltz discovered in his work as a plastic surgeon that some patients became much more self-confident and far more motivated after having their faces greatly improved.

1. Reprinted in Breaking Through College Reading, 2nd ed. Smith, Brenda D., Grandview, IL: Scott Foresman & Co. 1987. Included in this report by permission of Science Research Associates.

Why? Maltz came to the conclusion that the image the individual had of himself (or herself) inside was more motivating than the changes he had made outside. In short, the way an individual thinks he or she looks can be more important than the way he or she actually looks to others.

How Can You Use This Theory to Motivate Yourself?

Learn to picture yourself in a more complimentary way. First, research has shown that most people who have poor self-images actually do look better to others than they do to themselves. If this is true of you, you might try concentrating on your strong features instead of the weak ones, thus developing a more positive outlook and a better self-image.

Second, you might consider improving yourself on the outside as well as on the inside. You may not want to go as far as plastic surgery, but you could change your hairstyle, dress differently, lose or gain weight, exercise, and many other things. According to the theory, however, unless you recognize and accept the improvement, nothing may happen. Psycho-cybernetics is, of course, a do-it-yourself project. You do all the work--and you get all the credit, too!

Theory 2: Maslow's Hierarchy of Needs. This is a very old theory developed by Abraham Maslow in his book Motivation and Personality. The premise here is that you have certain needs that must be fulfilled if you are to be properly motivated. These needs are built one on top of the other as in a pyramid.

	Self-Fulfillment
	Ego
NEEDS	Social
	Security
	Physiological

The bottom need is physiological--food, good health. The next is safety and security. The third from the bottom is social needs: one needs to be accepted and enjoy the company of others. Next are ego needs--recognition from others. Finally, at the pinnacle, is one's need for self-fulfillment or self-realization.

The crux of this theory is that the bottom needs must be

fulfilled before the others come into play. In other words, you must satisfy your need for food and security before social needs become motivating. You must satisfy social and ego needs before self-fulfillment is possible.

How Can You Use This Idea to Motivate Yourself to Reach Goals?

If you believe Maslow is right, it would be self-defeating to reverse the pyramid or "skip over" unsatisfied needs to reach others. Chances are good, however, that your first two needs are being adequately satisfied so you could make a greater effort to meet new people and make new friends. This could, in turn, help to satisfy your ego needs. With both your social and ego needs better satisfied you might be inspired to attempt greater creative efforts which could eventually lead you to greater self-realization.

Theory 3: Psychological Advantage. This school was founded by Saul W. Gellerman. It contends that people constantly seek to serve their own self-interests, which change as they grow older. People can make their jobs work for them to give them a psychological advantage over other people at the same level. The way to create a psychological advantage in a starting job that is beneath your capacity is to learn all there is about that job. That way, you can use the job as a springboard to something better, a position that will give you more freedom and responsibility.

How Could You Use This to Inspire Yourself?

The best way, perhaps, is to be a little selfish about your job. Work for the organization and yourself at the same time. Instead of letting your job control you, perhaps pulling you and your attitude down, use it as a launching pad. Use it to build human relations that will be important later on. Study the structure of your organization so you will understand the lines-of-progression better than the other employees. Study the leadership style of your supervisor and others so that you will have a better one when your turn comes.

Theory 4: Motivation-Hygienic School. This theory was developed by Professor Frederick Herzberg. Basically it claims that undesirable environmental factors (physical working conditions) can be dissatisfiers. Factors of achievement, recognition, and freedom, on the other hand, are satisfiers. All working environments have both negative and positive factors.

How Can You Take Advantage of This Theory?

People who maintain positive attitudes under difficult circumstances do so through attitude control. They concentrate only on the positive factors in their environment. You can, for instance, refuse to recognize the demotivating factors in your job and concentrate only on those things that will satisfy your needs better.

This could mean a deemphasis on physical factors and more emphasis on psychological factors such as social, ego, and self-fulfillment needs. One individual puts it this way: "I work in a very old building with poor facilities. Even so I have learned that I can be happy there because of the work I do and the great people I work with. One quickly gets used to fancy buildings and facilities and begins to take them for granted anyway."

Theory 5: The Maintenance-Motivation Theory. This school is much like Herzberg's hygienic approach and was developed by M. Scott Myers of Texas Instruments, Inc. His research found that employees usually fall into one of two groups: motivation seekers and maintenance seekers. In short, some people look for those factors that are motivating to them and are constantly pushing themselves toward fulfillment. Others are concerned with just staying where they are. Maintenance seekers spend much time talking about working conditions, wages, recreational programs, grievances, and similar matters and do little or nothing to motivate themselves. Motivation seekers, on the other hand, look beyond such matters.

How Might You Use This to Improve Your Own Motivation?

The obvious answer is, of course, to keep yourself out of the maintenance-seeker classification. To do this you should try not to overassociate with those in the maintenance classification. Without your knowing it, they could pull you into their camp. Try also to talk about positive things instead of being a complainer. Verbalizing negative factors often intensifies the dissatisfaction one feels. Turn your attention to things you can achieve on the job--not to the negative factors.

COMPREHENSION QUESTIONS

Answer the following with a, b, c, d, or fill in the blank.

1. The best statement of the main idea is
 - a. motivation comes from within and cannot be taught
 - b. people can use different theories of motivation to motivate themselves
 - c. people who are not motivated lose their jobs
 - d. motivation is the responsibility of management in an organization

2. The purpose of this selection is to
 - a. improve management
 - b. criticize supervisors
 - c. encourage self-motivation
 - d. analyze mistakes

3. According to Dr. Maltz's theory, many people make mistakes by
 - a. thinking they look worse than others think they do
 - b. trying to look as good as others
 - c. thinking they look better than they do
 - d. trying to hide their weaknesses from others

4. In Maslow's "Hierarchy of Needs," winning sales trophies satisfies the
 - a. security need
 - b. social need
 - c. ego need
 - d. self-fulfillment

5. Gellerman's theory of psychological advantage is based primarily on
 - a. competition
 - b. self-interest
 - c. group cooperation
 - d. the needs of management

6. An application of the motivation-hygienic school theory would be that a person
 - a. work only in a positive environment
 - b. motivate supervisors to clean up the environment
 - c. ignore the negative factors in the environment and focus on the positive factors
 - d. seek a job with only positive factors

7. According to the maintenance-motivation theory, someone wants to stay in the same position for a few more years until retirement is a _____

Answer with T (true), F (false).

8. The author seems to agree with the quotation at the beginning of the selection.
9. In Maslow's hierarchy, the need to feel that you are using all of your talents to the best of your ability is the self-fulfillment need.
10. Dr. Maltz's theory is exactly the opposite of the theory of Professor Herzberg.

VOCABULARY

- | | |
|---|--|
| 1. "feel stifled"
a. useless
b. smothered
c. angry
d. sick | 2. "inspire yourself"
a. motivate
b. force
c. command
d. instruct |
| 3. "proponent of this theory"
a. scholar
b. attacker
c. supporter
d. manager | 4. "The premise here is"
a. signal
b. mistake
c. meaning
d. supposition |
| 5. "at the pinnacle"
a. bottom
b. crucial time
c. peak
d. most noticeable point | 6. "the crux of this theory"
a. crucial point
b. beginning
c. solution
d. reward |
| 7. "deemphasis on physical factors"
a. renewed response
b. less stress
c. complete drop
d. minor stress | 8. "hygienic approach"
a. scientific
b. analytical
c. healthful
d. resourceful |

9. **"grievances, and similar matters"**

- a. successes
- b. contests
- c. enrichments
- d. complaints

10. **"Verbalizing negative factors"**

- a. Hiding
- b. Talking about
- c. Overlooking
- d. Remembering

WHAT MAKES SMALL GROUPS WORK BEST

From Speaking with Confidence, 1977 by Karen Carlson and Alan Meyers¹

Not all groups operate successfully, if we define "success" as the accomplishment of the group's goals to the satisfaction of all of its members. Remember, however, that success depends less on the method than on you. By our definition a group requires that each member contribute, so you can't merely occupy a chair throughout the term. You can't be unenthusiastic, unprepared to speak, and unwilling to take risks in what you say, or you'll simply encourage others to act that way, too. You must try to communicate your reactions, ideas, and thinking to others in the group. Though you needn't speak every minute of every class period, you must get involved. Producers cherish non-involvement. They want the instructor to tell them what to think, what to do. But you're not a producer; you're a thinker; and thinkers can operate independently, can take a "Why Not?" attitude.

Your Role as a Participant in Small-Group Interaction

Your involvement can take many constructive and productive forms, the most common of which lies simply in giving your information and ideas to the group. When you make a speech to the group, momentarily you'll be the principal supplier. And when you participate in information-gathering or problem-solving discussions, you must continue contributing facts of information which the others didn't know. Often when the group lacks information, as a member you can ask questions to elicit it. "Wait a minute," you might say. "Can't we find more than three kinds of nonverbal communication?" Or, "Your response to Jack's speech was interesting, Mary, but why do you think it would succeed only with college students?"

Groups can easily be led onto side issues, too, especially if they're more fun than the main task, so you may occasionally be guiding the discussion back on course. You might find yourself saying, "I'm enjoying this; but with only a few minutes left in the hour, shouldn't we reach some conclusions about Jack's speech?"

1. Reprinted in Breaking Through College Reading, 2nd ed. Smith, Brenda D. Grandview, IL: Scott Foresman & Co. 1987. Included in this report by permission of Alan Meyers.

In discussions, you will often find that you must be sensitive to the feelings of other members, too. Thus, occasionally, you must lessen conflict between members, make a joke to relieve the tension or monotony, or negotiate a compromise between two or more differing ideas. You'll watch for verbal or nonverbal signs of problems between people--name-calling, raised voices, grimaces, withdrawal--and you'll make an effort to find a solution. "I know you're angry, John, but hear Marty out before you jump in." Or, "Look, Sue, you and Diane both have valid points. Let's identify the areas in which you mostly agree."

Of course, the fact that these negotiating and tension-reducing functions are necessary suggests some of the potential pitfalls in participation and involvement, risks which can prove destructive, especially when they lead the group away from its task and into personality conflicts.

Your Role as a Leader in Small-Group Interaction

None of you will assume the throne by divine right. In fact, your group will function most productively when you think of leadership as a responsibility which you all must assume and share. But at various times--when you ask for reactions after your speech, or when the group discusses an issue you've raised--you'll find yourself in an informal leadership role.

Traditionally, researchers have described three types of leaders: the authoritarian, the democratic, and the laissez-faire. The first probably has no place in your group. The authoritarian leader is the BOSS, the drill sergeant, second in command to the deity: Do it my way--no questions, no complaints, love it or leave it. In the military or in some businesses, authoritarians lead efficiently as long as they have legal or economic power to back them up. But among your classmates, a group of equals, no one should or will conquer and build an empire.

Which of the other two types of leadership--democratic or laissez-faire, will be appropriate to your small group depends on the nature of the discussion and the personalities of the people in the group. Both types, however, are merely more formalized extensions of the positive attitudes and roles we've already described for all group members. As a democratic leader you (1) treat the others as equals, (2) allow everyone to speak, (3) respect everyone's opinions and feelings, (4) guide the discussion, (5) summarize occasionally, (6) try to effect compromise, and (7) arbitrate disputes.

On the other hand, a laissez-faire (French for "let it happen") leaves the leadership and maintenance functions to

the group itself. He or she merely presides over the meeting. Successful laissez-faire-led groups require the right mix of sensitive and sensible, responsive and responsible people who can operate without supervision. Most likely, you and the other members of your group will practice both the democratic and laissez-faire types of leadership, even in the same discussion. No matter how you lead, however, be sensitive both to the task and the feelings of the people involved.

In short, as a leader you should be a participant in group interchange, too. You should offer information, ask questions to elicit it, keep the discussion on the topic, summarize occasionally, help to work out compromises and resolve conflicts. But don't feel you must perform all of these tasks all of the time. A group straying off the topic for a while may be feeling the need to ease off a bit, inject a little humor, relax. This may serve to bind the members more closely together and in the long run make them more productive. If you see that the group is trying to proceed without adequate information--which you don't have--perhaps you can help someone else notice and supply it.

In those instances where you are serving as a leader in the interaction of the group, show patience, sensitivity, an awareness of subtle differences and variations in ideas and opinions. Good leaders listen to the words the group members exchange and sense the feelings behind the words. They look and feel, as well as speak and listen. If you see Mark grimace, ask him what's on his mind. If Judy shakes her head, ask her why she disagrees. Don't force an issue, though. A skillful leader respects the rights of others to be silent. If each of you in the group considers yourself responsible not only for involvement and participation, but also for assuming these positive leadership tasks, you will find that your group will function smoothly and productively.

COMPREHENSION QUESTIONS

Answer the following with a, b, c, d, or fill in the blank.

1. The best statement of the main idea of this selection is
 - a. small groups work best under democratic or laissez-faire leadership
 - b. small groups function best when each member feels a responsibility for active participation and positive leadership
 - c. success is the accomplishment of the goals set by the leaders
 - d. small groups work best when there is both constructive and productive interaction

2. For group "success," the author feels that the most important element is _____

3. Carl Rogers believes that the primary reason groups fail is because
 - a. individuals do not state their views
 - b. members interpret remarks personally rather than from the speaker's point of view
 - c. democratic leadership is lacking
 - d. group members do not negotiate and reduce tension

4. The primary purpose of this selection is to
 - a. encourage the decision-making process in small groups
 - b. describe Carl Rogers' theory of small group behavior
 - c. explain what small groups need to function effectively
 - d. define the different types of group leadership

5. It can be concluded that laissez-faire leadership would be most inappropriate for
 - a. a study group in a college class
 - b. several friends working on a charity project
 - c. the military
 - d. a group of three attorneys in a legal firm

6. An example of authoritarian leadership would be
 - a. Hitler
 - b. the United States Congress
 - c. Gandhi
 - d. Martin Luther King, Jr.

7. The author believes that the best type of leadership for an average small group is
 - a. authoritarian
 - b. democratic
 - c. laissez-faire
 - d. a combination of authoritarian and democratic

Answer with T (true), F (false) or CT (can't tell).

8. Good group members both give and take.
9. Carl Rogers feels that people eagerly accept change.
10. The author feels that groups that stray off the topic are seldom productive.

VOCABULARY

According to the way the boldface word was used in the selection, answer a, b, c, or d for the word or phrase that gives the best definition.

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. "cherish non-involve-ment" <ol style="list-style-type: none"> a. question b. rely on c. suggest d. appreciate | <ol style="list-style-type: none"> 2. "the principal supplier" <ol style="list-style-type: none"> a. theoretical b. administrative c. chief d. loudest |
| <ol style="list-style-type: none"> 3. "relieve the tension or monotony" <ol style="list-style-type: none"> a. fear b. seriousness c. sameness d. nervousness | <ol style="list-style-type: none"> 4. "raised voices, grimaces, withdrawal, <ol style="list-style-type: none"> a. gossip b. lies c. skeptical voices d. facial expressions of disgust |
| <ol style="list-style-type: none"> 5. "the potential pitfalls" psychologist" <ol style="list-style-type: none"> a. possible b. hopeful c. divergent d. powerful | <ol style="list-style-type: none"> 6. "an eminent <ol style="list-style-type: none"> a. trusting b. famous c. immediate d. eager |

7. "one's own **biases**"

- a. emotions
- b. purposes
- c. desires
- d. prejudices

8. "but be **vigilant**"

- a. slow
- b. creative
- c. watchful
- d. aggressive

9. "lookout for the **intrusion**
of"

- a. unwelcomed entry
- b. acknowledgment
- c. announcement
- d. realization

10. "discourage it
diplomatically"

- a. randomly
- b. quickly
- c. tactfully
- d. completely

MARKETING RESEARCH

From Modern Marketing, 1978 (Scott, Foresman and Company) by Edward Fox and Edward Wheatley¹

Imagine yourself, for a minute, in the year 2001. You have been asked to write a review of twentieth century marketing, citing what, in your opinion, was the most significant development of the period. It's not unlikely that your choice would be the growth, maturation, and impact of marketing research. For marketing managers in the future, the basics of marketing research will be as familiar as the basics of the financial operating statement. Just as they will know how to use computer potential, they will know when research should, and should not, be used. What is good research, and bad, will be obvious.

Just what is marketing research? According to the American Marketing Association's Definitions Committee, it is the "systematic gathering, recording and analyzing of data about problems relating to the marketing of goods and services." In short, marketing research gives you the information about markets that you need to make rational management decisions.

Clothed in its formal definition, marketing research seems deceptively dreary. In fact, though, its excitement and challenge are great. Before we talk about some uses of and methods in marketing research, let's look at a few case histories. Perhaps the best way to see the impact of research is by reviewing the dismal fate of some who acted without its benefit, and the happier fate of some who used it.

The Failures

Collectors of classic cars today prize the Chrysler Airflow. Consumers in 1937 did not share this enthusiasm. Introduced as a major innovation in car design, it was admired by engineers and shunned by buyers. It looked strange, and it was different. In 1937 people were beginning to climb out of the Depression and had few free dollars to spend on a car that might not have a reasonable resale value. The venture was a major disaster.

In the early 1950s Chrysler was badly shaken by quite different circumstances. Instead of restyling in the late 1940s, as had Studebaker and Ford, Chrysler had stressed "common sense" styling and traditionally sound engineering.

1. Reprinted in Breaking Through College Reading, 2nd ed. Smith, Brenda D., Grandview, IL: Scott Foresman & Co. 1987. Included in this report by permission of Edward Wheatley.

The resulting deterioration in image culminated when, in one year, Chrysler lost about one third of its market share. That feat has never been paralleled by any other car manufacturer.

Curiously, these Chrysler failures had a common cause--despite a seeming paradox. The Airflow failed because it came before its time; the early 1950s cars had long outlived their time. At the end of World War II Americans looked forward to a promising, prosperous future--and the money to buy a piece of it. Studebaker and Ford were tuned in to these dreams; Chrysler was not. Both of its errors, then, apparently had the same source--its reliance on company opinion about what the public should buy and its failure to determine in advance what the public would buy.

It was in the early 1950s, too, that General Motors insisted no right-thinking American would buy an undersized, underpowered, and underchromed foreign car that cost as much as a used, late-model overdone American car. Not many years later, though, one new car in five being bought in the United States was a foreign compact. Then General Motors decided that the demand for good cheap transportation was significant and continuing. Surely, had the company's antennae been aimed at the consumer they would have picked up the early warning signals.

The car industry is not alone in its failure to sound out consumers before launching products. An American appliance manufacturer decided the most popular kitchen rotary mixer on the market was too noisy, vibrated too much, and was too expensive. After much research the company introduced a model that was quieter, more powerful, and less expensive--but the mixer sold poorly. A research team quickly discovered why when it interviewed people who preferred the original model after trying both in a store. Those consumers said they knew the new product was not powerful enough. How did they know? "Why, you can barely hear the machine in operation!" While assuming that a quiet mixer would be desirable, the company failed to realize that buyers may confuse noise with power.

Bristol Myers, a leading American drug manufacturer, thought that what this country needed was aspirin that could be taken comfortably without water. Surely demand for a product with such convenience would be great. However, the product failed in its market test. Research then showed that, whatever the inconvenience in having to take aspirin with water, consumers typically saw water as part of the therapeutic treatment: If aspirin and water were not taken together, no cure would result! Consumers didn't know that water only helped in swallowing the tablet. That information brought up a new problem. Should the company promote the new product as a new convenience and try to show that water has nothing to do with aspirin's effectiveness? Or should it

withdraw the product from the market? Bristol Myers decided that attempting to change consumer beliefs would cost too much, and it dropped the product. Could not consumer attitudes toward water and aspirin have been determined before production?

These examples of product failure are not intended to minimize American industry's genius in both production and marketing. Chrysler regained its status with its boldly designed Forward Look; Ford's Mustang was an unqualified and justified success, after its grisly failure with the Edsel; and GM's introduction of the \$14,000 Seville, Cadillac's "compact," was both bold and successful. But major companies do make serious blunders. And some of these blunders could be avoided by asking rather than assuming what customers want. Failure to properly research markets before developing products and marketing plans is evidence of marketers' slowness in adopting scientific methods. Marketing managers need to recognize what such methods offer and to understand the dangers in rejecting them.

The Successes

Shortly after World War II a West German motor scooter maker intensively studied the market for transportation. It found two broad strata--the higher status automobile group and the lower status two-wheel group. The second ranged from the bicycle (low) to the scooter (high). The firm decided that if it could persuade people to think of the scooter as the bottom of the automotive group, rather than the top of the lower status group, it could open an important new market. The scooter would symbolize its owner's move into a higher social and economic bracket, a step up from the top of the lower status two-wheel segment.

On the basis of this finding, the manufacturer added to its scooters every possible gadget to make them more like cars, including cigarette lighters and glove compartments. And with this product change came a new advertising program. Scooter drivers became members of a superior income group. They were no longer seen in the company of other scooter drivers but were, rather, fun-loving members of an obviously affluent group of car owners. This research paid off with a significant increase in scooter sales.

The story of Gala paper towels (a division of the American Can Company) also indicates the profitability of good research in planning new products and their packaging. In order to increase its share of the highly competitive paper towel market, the company researched many different color combinations and designs as well as promotional changes. It found that consumers often preferred colors and patterns over

the customary plain white. It also found that consumers were attracted by the length of each towel. Thus a towel that could be called "the longest in the industry" would find a market. Research also showed a division of preference between single-roll and two-roll packages. The company changed its product according to the findings and coupled the changes with a new advertising campaign. Within seven months "Gala was selling double the average market growth for the paper towel industry."² Clearly, even for the most mundane product, consumer research can indicate possible changes that may yield high profits.

2. Thomas L. Berg, Mismarketing, 1970, p. 33.

COMPREHENSION QUESTIONS

Answer the following with a, b, c, d, or fill in the blank.

1. The best statement of the main idea of this selection is
 - a. market research will be used by all market managers in the year 2001
 - b. Chrysler, with the introduction of the Chrysler Airflow, suffered a failure because it did not determine what the public would buy
 - c. marketing research can help managers avoid failures before developing and marketing products and help achieve success by indicating desirable changes
 - d. although the car industry suffered a number of failures due to lack of market research, the scooter industry achieved success

2. The author feels that the most significant development in twentieth-century marketing is _____

3. The author's primary purpose in this selection is to
 - a. describe the history of marketing research
 - b. explain the methods of marketing research
 - c. illustrate the importance of marketing research
 - d. challenge the growth of marketing research

4. The author refers to Chrysler's failure as a paradox because
 - a. one was too much restyling and the other a lack of restyling
 - b. Studebaker and Ford did not have the same problem
 - c. Americans did not have free dollars to spend on a car in 1937
 - d. the Chrysler Airflow was considered strange and different

5. Both the noiseless rotary mixer and the waterless aspirin illustrate that
 - a. the success of marketing research
 - b. the company's ability to predict what the public should buy
 - c. the preference of the consumer is not always based on sound reasoning
 - d. educating the public increases sales and profits

6. The market success of the West German motor scooter was due to all of the following except
 - a. changing its image
 - b. original owners moving to a higher social and economic bracket
 - c. adding luxury features to the scooters
 - d. advertising the product in a different manner
7. The author implies all of the following about Gala paper towels except
 - a. they are available in different colors
 - b. they are significantly different in quality from any other paper towel on the market
 - c. they are longer than other paper towels
 - d. they are available in patterns and designs

Answer the following with T (true), F (false), or CT (can't tell).

8. Gala towels are sold only in two-roll packages.
9. Ford's Mustang was a greater market success than Cadillac's Seville.
10. The author implies that the poor judgment and research of General Motors gave a market advantage to foreign compacts.

VOCABULARY

According to the way the boldface word was used in the selection, answer a, b, c, or d for the word or phrase that gives the best definition.

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. "citing what, in your opinion, was" <ol style="list-style-type: none"> a. questioning b. remembering c. quoting d. seeing 3. "seems deceptively dreary" <ol style="list-style-type: none"> a. misleadingly b. aimlessly c. hopelessly d. needlessly | <ol style="list-style-type: none"> 2. "impact of marketing research" <ol style="list-style-type: none"> a. need b. continuation c. explanation d. force 4. "reviewing the dismal fate" <ol style="list-style-type: none"> a. recent b. dangerous c. miserable d. ultimate |
|---|---|

5. "**shunned** by buyers"

- a. criticized
- b. avoided
- c. praised
- d. accepted

7. "**culminated** when"

- a. ended
- b. was exposed
- c. exploded
- d. fell apart

9. "an obviously **affluent** group"

- a. happy
- b. wealthy
- c. cultured
- d. trend-setting

6. "the **venture** was"

- a. sales promotion
- b. offer
- c. agreement
- d. risky undertaking

8. "of the **therapeutic** treatment"

- a. related
- b. necessary
- c. healing
- d. interwoven

10. "for the most **mundane** product"

- a. commonplace
- b. exciting
- c. useful
- d. popular

THREE COMMON HUMAN RELATIONS MISTAKES

From Your Attitude Is Showing, 1977 by Elwood Chapman¹

In business operations today many new, ambitious employees make human-relations mistakes that damage their personal progress. It is the purpose of this chapter to single out and fully explain the implications of three of the most common mistakes.

1. Failure to listen.
2. Underestimating others.
3. Failure to report or admit mistakes to management.

Failure to Listen

On the job, hearing is a matter of practical communication. When a supervisor or fellow worker wishes to transmit an idea, a warning, or a change in procedure to you, he (or she) usually does it verbally. There may not be time for written communication. Conditions may not be ideal. There may be other sounds he cannot eliminate. It may be the end of the day, and you may be tired. His words may mean one thing to him and another to you. Good, clear, accurate communication is never easy.

You often hear a mother say that she must shout to get the message across to her young son. As sender, she is in a frustrating position. "He just doesn't listen to me anymore," she says. And the son may have the same complaint: "There's no use talking to my mother. She just doesn't listen, so how can she understand me?" Perhaps both mother and son have forgotten how to listen.

This can happen to people with the best of intentions. Sometimes it is very difficult just to sit back and listen. There are three basic reasons why this is true. First, we are often so busy with our own thoughts and desires, related or nonrelated, that we are 90 percent sender and only 10 percent receiver. When this happens, the communication system breaks down. Second, some individuals are self-centered. Instead of hearing what is being said, they are merely waiting for the speaker to finish so that they can then talk. Getting their thoughts organized keeps them from being good listeners. Third, some people allow themselves to analyze motives or personality traits of the person speaking and, again, fail to hear what is said.

1. Reprinted in Breaking Through College Reading, 2nd ed. Smith, Brenda D. Glenview, IL: Scott Foresman & Co. 1987. Included in this report by permission of Science Research Associates.

In business and industry, the ability of the employee to listen is often a matter of dollars and cents. A draftsman who doesn't hear an architect tell him to make a certain change in a blueprint can cause the loss of thousands of dollars when a bid is accepted on specifications that are not correct. A salesman who fails to hear a message from a client, and as a result does not comply with an important delivery date, can lose not only the sale but also a valuable customer.

Being a good listener is not easy. It will take a conscientious effort on your part. But one of the finest compliments you will ever receive will be something like this: "One thing I really like about him is that if you tell him something once you know he's got it. You never have to tell him twice."

Being a good listener will pay handsome dividends!

Underestimating Others

The second of the three big mistakes according to personnel people, is that of underestimating others, particularly those in management positions. One of the mistakes you can make most easily is to underestimate the contribution of another person to the productivity of your organization.

As a nonsupervisor new to the organization, you cannot see the overall picture. You have no way of knowing the multiple responsibilities faced by other people. A management or nonmanagement person may not appear to be doing very much from your limited perspective. You might wrongly assume that he or she is coasting. This could be a big mistake.

Here is a simple case to emphasize the point.

Henry accepted a job with a major metropolitan department store. After thirty days of training he was temporarily assigned to the basement operation. His supervisor was Ms. Smith, the manager of inexpensive women's apparel.

Henry soon discovered that he was part of a rather hectic operation. Merchandise moved in and out of the department quickly. Racks and counters were messy and disorganized. Ms. Smith was not an impressive person to Henry. Her desk was disorderly. She seemed to spend more time than necessary talking to the employees.

Henry decided that he had drawn an unfortunate first assignment. He wished he could move to the upper floors where there was more prestige and where the managers seemed to be better organized.

It was his good luck, however, to meet a young buyer at lunch one day. From this woman he learned that Ms. Smith had the most profitable department in the store and an outstanding reputation with all top management people. Ms. Smith had

trained more of the store's executives than any other person. It was then obvious that Henry had received one of the best assignments and had seriously underestimated Ms. Smith.

The new employee in this case learned a big lesson without getting hurt. He quickly changed his attitude toward his supervisor before the relationship was seriously damaged. He was fortunate.

The danger is great when you fail to build a good relationship with a supervisor or a fellow employee because you underestimate her (or him).

You, as a new employee, are in the poorest position to estimate the power, influence, and contribution that others are making to the organization, especially when these people are already in management positions. You will be smart to avoid prejudging others. Different people make different contributions to the growth and profit of an organization. Top management can usually see this, but you usually cannot.

Failure to Report or Admit Mistakes to Management

The third common human-relations mistake is failure to admit or report to management personal errors in judgment or violations of company procedures, rules, and regulations.

Everyone makes minor slips and blunders from time to time. Even a good employee is not perfect. Precise and methodical people sometimes make mistakes in calculations. Logical thinkers who pride themselves on their scientific approach to decision making will sometimes make an error in judgment. A conscientious person who is very loyal to his organization will, on occasion, violate a company rule or regulation before he knows it.

These things happen to the best of people, and unless you are a most unusual person they will happen to you. These little mistakes will not damage your career if you admit them openly. They can, however, cause considerable damage if you try to cover them up and in so doing compound the original mistake. To illustrate, let us take the incident of the dented fender.

Ken had started his career with a large banking organization six months before. One of his numerous responsibilities in his first assignment was to deliver important documents to various branch operations in the banking system. To do this, he would check out a company car from the transportation department.

On one such assignment, Ken dented the fender of a company car while backing out of a crowded parking lot. He knew that he should report the damage to the dispatcher, but the dent was so insignificant that he thought it would go unnoticed. Why make a federal case out of a little scratch?

Why spoil a clean record with the company over something so unimportant?

Two days later Ken was called into the private office of his department manager. It was an embarrassing twenty minutes. He had to admit that he was responsible for the damage and that he had broken a company rule by not reporting it. The incident was then closed.

The slight damage to the company car was a human error anyone could make. The big mistake Ken made was in not reporting it. Looking back on the incident, he admitted that the damage to the car was far less than the damage to his relationships with others.

Most little mistakes, and sometimes many big mistakes, are accepted and forgotten when they are openly and quickly reported. But to throw up a smoke screen to cover them up is to ask for unnecessary trouble. The second mistake may be more damaging than the first.

COMPREHENSION QUESTIONS

Answer the following with a, b, c, d, or fill in the blank.

1. The best statement of the main idea of the passage is
 - a. mistakes are common in business
 - b. employees tend to make three common mistakes in human relations
 - c. there is no room for human relations mistakes in business
 - d. common business mistakes cost money
2. The primary purpose of the passage is to
 - a. explain the mistakes through examples
 - b. criticize people for making mistakes
 - c. apologize for business making mistakes
 - d. contrast different types of business management
3. The author seems to have the most respect for
 - a. people who never make mistakes
 - b. overachievers
 - c. a high IQ
 - d. honesty
4. According to the passage, people fail to hear what was said for all of the following reasons except
 - a. they were thinking of something else
 - b. they were waiting to speak
 - c. they were concentrating too much on the main ideas
 - d. they were analyzing the motives of the speaker

5. The author implies that Henry was placed with Ms. Smith to learn
 - a. how to get organized
 - b. how to sell to wealthy customers
 - c. how to run a profitable department
 - d. how to respect poor workers
6. The author implies that Ken's manager was most troubled by Ken's
 - a. carelessness
 - b. dishonesty
 - c. laziness
 - d. impoliteness
7. The author would probably agree that people hear but they do not _____

Answer with T (true) or F (false).

8. The author feels that misunderstanding others is a bigger mistake than failing to admit errors.
9. The author feels that a new employee needs to spend time observing rather than complaining.
10. The passage states that only 10 percent of the population listens.

VOCABULARY

According to the way the boldface word was used in the selection, answer a, b, c, or d for the word or phrase that gives the best definition.

- | | |
|--|---|
| <p>1. "transmit an idea"</p> <ol style="list-style-type: none"> a. learn b. send c. lead d. remember | <p>2. "accurate communication"</p> <ol style="list-style-type: none"> a. correct b. concise c. crucial d. short |
| <p>3. "best of intentions"</p> <ol style="list-style-type: none"> a. moods b. motives c. interests d. manners | <p>4. "does not comply"</p> <ol style="list-style-type: none"> a. use great care b. set up rules c. act in accordance d. work in haste |

5. "take a **conscientious** effort"
- a. sincere
 - b. secret
 - c. surprising
 - d. new
7. "inexpensive women's **apparel**"
- a. clothing
 - b. necessities
 - c. cosmetics
 - d. shoes
9. "was more **prestige**"
- a. free time
 - b. friendliness
 - c. money
 - d. status
6. "major **metropol-**
itan department store"
- a. luxury
 - b. congested
 - c. city
 - d. large
8. "rather **hectic** operation"
- a. feverish
 - b. useful
 - c. well-managed
 - d. enjoyable
10. "**compound** the original mistake"
- a. forget
 - b. lie about
 - c. multiply
 - d. reduce

APPENDIX C

Directions For Writing Summaries

1. Read the entire article to get a general impression of what it is about.
2. Write a thesis statement for the entire article on planning paper. This may be more than one sentence if necessary.
3. Underneath your thesis statement write a sentence for each topic heading describing what that section is telling the reader. This should be the most general statement you can make about the section. Leave about 10 lines between each statement.
4. Look at each section and write down major points that describe in more detail the statement you made in step 3 in the spaces you left under each statement. You may underline parts of the text if that helps. Remember that often a major point will be the topic sentence of a paragraph but you cannot rely on this. It may be necessary to write more than one sentence to adequately describe your major point.
5. Copy your summaries onto the paper that you will hand in, making revisions as you do your copying.

Summary Scripts

Becoming Healthy

Psychological health occurs as a result of what you do rather than as something you decide.

- I. There are 3 things to avoid in order to become psychologically healthy.
 - A. One thing to avoid is excessive self-doubt.
 1. Self doubt comes from the feeling that other people will find you unacceptable in some way which leads you not to accept yourself.
 2. Understanding yourself and others or being loved by another are ways to avoid self-doubt.
 - B. Another thing to avoid is dread.
 1. Dread is the feeling of worry or anxiety when you are not sure why.
 2. You can avoid dread by learning to relax, reducing the pressures in your life and

- D. of a baby that they will not usually perform.
 - E. Not all people show all these effects.
 - F. Other dramatic effects include feeling no pain, mentally creating burn marks, and remembering things not remembered in the normal state.
 - G. Posthypnotic suggestions can cause subjects to respond to a cue after they come out of hypnosis.
 - H. Hypnotized subjects are not faking it and rarely will do things that they wouldn't under different conditions.
 - H. It's dangerous to play around with hypnosis because subjects can become dependent or emotional, but they will not remain in a hypnotic state indefinitely.
- III. There are several theories of what happens during hypnosis.
- A. The old theory was that it was a form of sleep but that is not true.
 - B. Some say it may be a role hypnotized people play, but other theories go further.
 - C. Others say subjects pay attention only to things the hypnotist suggests and pay no attention to information such as pain that come from other levels of the brain.

Motivating Yourself

Even though your present job may not be ideal, you can motivate yourself to do a good job. Theories on why people are motivated to toward high productivity can help you.

- I. Self-Image Psychology states that in order to achieve certain goals, an individual must recognize the need for a good self-image. Internal factors are more important than external factors.
 - A. Use this theory by concentrating on strong rather than weak features. Improve yourself on the outside as well as on the inside.
- II. Maslow's Hierarchy of Needs theory says that you have lower needs that need to be fulfilled before other higher needs come into play.
 - A. Use this theory by meeting social and ego needs by making new friends. Then you might be inspired to attempt greater creative efforts leading to self-realization.
- III. The Psychological advantage theory states that people seek to serve their own self interests, which change as they grow older.
 - A. The way to create a psychological advantage in your

job is to learn all there is about the job so you can use it as a springboard to something better.

- IV. The Motivation-Hygienic Theory states that all working environments have satisfiers such as achievement and dissatisfiers such as unpleasant working conditions.
 - A. Use this theory to control your attitude by concentrating on satisfiers and ignoring dissatisfiers.
- V. The Maintenance-Motivation Theory states that employees fall into maintenance-seeker or motivation-seeker category. Motivation-seekers push toward factors that motivate while maintenance-seekers like things to stay the same.
 - A. Use this theory by keeping yourself out of the maintenance seeker group by not over-associating with those in that group. Talk about positive things about your job, and pay attention to things you can achieve on the job.

What Makes Small Groups Work Best

Success for a small group is defined as the accomplishment of the groups goals to the satisfaction of all its members. Success depends on every members making a contribution, which means you must become involved.

- I. Your role as a participant in small-group interaction is to contribute in several constructive and productive ways.
 - A. One is to give information and ideas or ask questions.
 - B. Another is guiding the discussion back on course.
 - C. A third constructive contribution is to be sensitive to the feelings of other group members.
 1. You might need to lessen conflict, make a joke to relieve tension or monotony, or negotiate a compromise between differing ideas.
- II. Your role as a leader in small-group interaction also involves making contributions.
 - A. There are three types of leaders: authoritarian, democratic and laissez-faire.
 1. The authoritarian leader is someone who acts like the boss. This will not work well in a group of equals.
 2. The democratic leader treats others as equals, allows everyone to speak, respects everyone's feelings and opinions, guides the discussion, summarizes occasionally, tries to effect compromise and arbitrates disputes.
 3. The laissez-faire leader leaves the leadership and maintenance functions to the group itself.
 - B. When you are a leader, you may function as a participant or as a leader.
 1. When you are being a participant you should give information, ask questions, guide discussion, summarize, work out compromise and resolve conflicts.
 2. When serving as a leader in group interaction, you should show patience, sensitivity and an awareness of differences in ideas and opinions.

Marketing Research

The most significant development of 20th century marketing may be the development of marketing research. Marketing research is the systematic gathering and analysis of data about

marketing goods and services.

The best way to see the importance of marketing research is to review the fate of companies that acted without its benefit and the happier fate of some who used it.

- I. One example of a product failing to sell is the Chrysler Airflow.
 - A. Chrysler did no research prior to developing this automobile.
 - B. The product failed to sell because people feared that the Airflow's design, which was a deviation from convention, would affect the car's resale value.

- II. An example of a company's success due to marketing research is that of a West German Motor Scooter Company.
 - A. Having studied the market for transportation, it found that there was a high status four-wheel group of buyers and a low-status two-wheel group.
 - B. Research paid off in increased scooter sales when the company convinced the public that drivers who bought their motor scooter belonged to the four-wheeled income group of drivers.

[Credit will be given for any well stated examples that fit into the above categories. In order to get credit for the example in section I, the student must show a) they did no research and b) the product failed. In order to get credit for example II, the student must show a) the company did research and b) it paid off.]

Three Common Human Relations Mistakes

There are three common human relations mistakes that damage new, ambitious employees' progress.

- I. One type of mistake is failure to listen to supervisors or fellow workers.
 - A. This can occur for several reasons.
 - 1. One is physical factors such as noisy environments or work fatigue.
 - 2. Another reason is that words mean different things to different people.
 - 3. Third, sometimes people have difficulty listening.
 - B. In business and industry an employee's ability to listen often saves the company money so the ability to listen well will earn you praise and pay off.

- II. Another type of mistake is underestimating the contribution of others to an organization.
 - A. As a nonsupervisor new to the organization, you are not in a position to judge the contributions of others, especially those in management positions.
 - B. Failure to build a good relationship with a supervisor or fellow employee because you underestimate him or her is dangerous (because it can block your progress).

- III. A third common human relations mistake is failure to admit or report mistakes to management.
 - A. Even the best of people make little mistakes.
 - B. These mistakes will not damage your career if you admit them openly.
 - C. However, they can cause damage if you try to cover them up.

Delayed Recall Test

Directions: Last week you read and wrote a summary for the article "Three Common Human Relations Mistakes." Write as much as you can recall about that article using the following words as cues. The words are divided into three sections that correspond with the three sections of the article.

Section 1

Listen; Physical; Words; Difficulty; Money

Section 2

Underestimating; Judge; Relationship

Section 3

Mistakes; Little; Career; Cover

Key For Scoring Three Common Human Relations Mistakes

There are [three] common human relations mistakes (5) that damage [new, ambitious] employees' progress (5).

- I. One type of mistake (5) is failure to listen (5) [to supervisors or fellow workers].
 - A. Verbal communication is often necessary (or often occurs) (4).
 - B. It is often difficult to communicate verbally (4).
 - C. There are several (or three) reasons we don't listen (4).
 - D. In business and industry an employee's ability to listen often saves the company money (4).
 - E. Being a good listener takes work (2) but will earn you praise (1) and pay off (1).
- II. Another type of mistake is underestimating (5) the contribution of others (5) [to an organization].
 - A. [As a nonsupervisor new to the organization], you are not in a position to judge the contributions of others [especially those in management positions] (10).
 - B. Failure to build a good relationship with a supervisor or fellow employee because you underestimate him or her is dangerous [because it can block your progress] 10.
- III. A third [common human relations] mistake (5) is failure to admit or report mistakes [to management] (5).
 - A. Even the best of people make little mistakes (7).
 - B. These mistakes will not damage your career if you admit them openly (7).
 - C. However, they can cause damage if you try to cover them up (6).

Note: Numbers in parentheses are the points allotted for the preceding proposition. Brackets indicate that the phrase, while optimal, is not necessary to receive points.

Students must mention that "mistakes" have to do with human relations in some way in order for them to receive credit for the first part of the thesis statement, but this need not be repeated for Roman numerals I, II and III. They need not mention that "failure to listen" is a mistake, but they must state that Roman numerals II and III are mistakes in order to receive credit.

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