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Effects Of Comparison/Contrast Writing Instruction On The Reading Comprehension Of Tenth-Grade Students

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EFFECTS OF COMPARISON/CONTRAST WRITING INSTRUCTION ON THE READING COMPREHENSION OF TENTH-GRADE STUDENTS

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VITA

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EFFECTS OF COMPARISON/CONTRAST WRITING INSTRUCTION ON THE READING COMPREHENSION OF TENTH-GRADE STUDENTS

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Catherine A. Baker

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APPROVAL SHEET

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ABSTRACT

This study investigated the influence of writing instruction on the reading comprehension of tenth-grade students. Although research has shown that instruction in the recognition of text structure can increase reading comprehension significantly and although it has been assumed that improvement in writing skill would improve reading skill as well, there has been little empirical research concerned with the actual influence of writing instruction. Thus, this study combined both ideas by attempting to determine the effect of writing instruction in text structure on reading comprehension.

This study employed eight classes of tenth-grade students taught by four teachers in two high schools. From these classes students were randomly selected to achieve even numbers of higher ability and lower ability readers within each class group. Each teacher taught one experimental and one control group, with the designation of each group determined randomly. The experimental treatment consisted of a lesson in writing comparison/contrast essays while each control lesson consisted of a reading comprehension lesson using comparative materials. All students received the same two-part posttest, which required them to write free recall statements of main ideas as well as answer multiple choice items. A series of *t* tests was

used to compare mean scores of the experimental and control groups of higher and lower ability readers.

Although no statistically significant differences were found between experimental and control groups, the mean scores for experimental groups were higher in every case, with the greatest differences being found between the scores of the lower ability readers for the free recall statements of main ideas and between scores of the higher ability readers on the multiple choice questions. Thus, the study suggested the beneficial tendencies of the experimental treatment and indicated the need to replicate the research over a longer period of time with more than one lesson devoted to treatment and with more classes assigned to each treatment.

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Chapter 1

THE PROBLEM

INTRODUCTION

Educators have traditionally been concerned with the teaching of reading and writing, these skills being not only two-thirds of the three R's but also the skills most needed in studying other academic areas. Literacy, in fact, has been considered the hallmark of civilized man. McLuhan argues that ". . . the phonetic alphabet, alone, is the technology that has been the means of creating 'civilized man' . . ." (1964, p. 86). If he is correct, teachers of reading and writing carry a great burden: the preservation of civilization.

Just how to best perform the duties of this trust, however, has been the occasion for much dissension among educators. Although reading and writing have been taught for centuries, teachers have yet to reach any consensus about the most appropriate methods or to find a great deal of empirical proof to link causes and effects in instructional methods or materials. Most methods and materials have been shown to be successful in some instances and to fail in others. New ideas for teaching reading and writing have too often degenerated into quickly passing fads, creating an educational atmosphere of action and reaction

rather than an atmosphere of stable growth and development.

Any investigation into the cause and effect relationships between reading and writing must be philosophically concerned with the attitude or world view demanded by literacy and the interrelationships among the four language functions: speaking, listening, reading, and writing. McLuhan points out that the easily acquired literacy generated by the phonetic alphabet fragmented man's perception and representation of his experience into a linear, sequential form in which abstract symbols arbitrarily represented individual sound components of words. He also indicates that this linear fragmentation has created many of the basic patterns found in western culture and that such linear patterns have become the mark of logic and reason (1964, pp. 84-90). Linear sequentialization has become a basic ingredient not only of mechanical, technological, and commercial life but also of social organization. Thus, literacy demands an accommodation with the linear, sequential world view and an understanding of the patterns operating therein.

Of equal concern are the interrelationships among the four language functions. Writing is both more and less than speaking, being more in terms of intent and audience and less in terms of sound. By the same token, reading bears the same relationship to listening. Further, just as speaking and listening are man's primary modes of communication, writing and reading are his secondary ones, parallel

to the primary modes but having as their principal advantage the ability to communicate across time and space. Just as speaking and listening are natural functions, writing and reading are artificial functions which must be taught in schools, functions which people do not master without specialized instruction.

But in the teaching of these skills it is important that specialization does not lead to separation of functions which are essentially similar. Most of the current thought about holistic language education is found in the writing of composition theorists. Rose (1983) decries the separation of writing from reading and thinking and explains that

> reading and writing are different processes, but it is simply not true that they are unconnected. Anthony Petrosky explains how current theories present reading as a kind of "composing process"; people construct meaning from text rather than passively internalize it. Teun Van Dijk points out that while we need to know the conventions, structures, and intentions of particular discourses to produce them, we likewise need such knowledge to comprehend them. . . . Reading and writing are intimately connected in ways we are only beginning to understand. (1983, pp. 118-119)

Similarly, Peterson (1982) points out that

> recent research in composition combined with the theoretical contribution of reader-response critics in literature suggests a possible unified theory of reading, interpretation and composition. The theory derives from the research of James Britton and Linda Flower in composition and of David Bleich and Louise Rosenblatt in reading. All four of these theorists posit the existence of an affective/personal language matrix which shapes experience into knowledge. . . . This personal matrix at the heart of the reading and writing processes implies that reading and writing are connected thinking processes which derive from similar, if not identical, mental structures. . . . All argue that we process experience through personal schemes, previous emotional responses, and private images or

> memories. When we sit down to compose or read something, we begin our organization and discovery of meaning through this matrix. (1982, pp. 460-461)

While Peterson proposes a pedagogical model which integrates literary studies with composition, Miller (1983) presents a model of a writing event which "may also suggest both a static and dynamic description of reading. Whether seen as an analytical mode that provides a reading or interpretation, or as an individual process, 'reading' depends on all these contextual and textual elements" (1983, pp. 230-231), these elements being divided into three main categories: history, situation, text. This model presents a theoretical basis for an integrated study of the processes of reading and writing as well as for their curricular integration.

Although the connections between reading and writing activities are important and obvious--for instance, one cannot read unless someone has written something which may be read--the impact of proficiency in one area on the acquisition of proficiency in the other is only now under experimental investigation by educators.

Purpose of the Study

The purpose of this study was to investigate the impact of writing on reading skills: specifically, to determine whether writing instruction in one of the rhetorical modes, comparison/contrast, would increase a student's reading comprehension of materials written in the same mode. Because the rhetorical modes require not only a particular

cognitive process but also provide a means of organization of material, the ability of the student to perceive the specific rhetorical mode or modes of a given reading selection could be predicted to enhance his perception of the cognitive constructs of the author as well as the method of organization within the selection. Both abilities might be expected to increase reading comprehension.

Studies of the relationship between reading and writing skills are necessary in order to help educators devise curricula and instructional methods to promote the acquisition of these skills. This study focused on one possible method of improving reading performance. John Henry Martin, in an interview, indicates that "there's a presumption of a high correlation [between writing and reading] but we don't really know" (Brandt, 1981, pp. 61-62). Similarly, Shanahan concludes that "the available research does not indicate precisely how writing influences reading . . ." (1980, p. 357). He warns teachers that due to the "limited research concerning the impact of writing instruction, . . . specific attempts to exploit [these relationships] will be haphazard at best" (1980, p. 366). Abartis and Collins, too, mention the lack of hard evidence in this area: ". . . although it seemed reasonable to assume that increasing students' writing skill . . . would also increase their ability to read more difficult text, empirical data to substantiate this supposition were limited" (1980, p. 409).

Statement of the Problem

The objectives of this study were: (a) to study whether differences in reading comprehension levels would result from writing instruction, (b) to measure whether such differences were statistically significant, and (c) to compare these differences in groups of high school sophomores with higher and lower reading ability levels.

GENERAL HYPOTHESES

The following hypotheses indicate predicted relationships between the independent and dependent variables of this study:

1. When tested on their ability to comprehend comparison/contrast passages, students in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, as assessed by multiple choice items, significantly different from those of students in a control group who have not had such writing instruction.

2. When tested on their ability to comprehend comparison/contrast passages, students in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, as assessed by free recall statements of main ideas, significantly different from those of students in a control group who have not had such writing instruction.

3. When tested on their ability to comprehend comparison/contrast passages, students of higher reading

ability in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, as assessed by multiple choice items, significantly different from those of students of higher reading ability in a control group who have not had such writing instruction.

4. When tested on their ability to comprehend comparison/contrast passages, students of higher reading ability in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, as assessed by free recall statements of main ideas, significantly different from those of students of higher reading ability in a control group who have not had such writing instruction.

5. When tested on their ability to comprehend comparison/contrast passages, students of lower reading ability in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, as assessed by multiple choice items, significantly different from those of students of lower reading ability in a control group who have not had such writing instruction.

6. When tested on their ability to comprehend comparison/contrast passages, students of lower reading ability in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, as assessed by free recall statements

of main ideas, significantly different from those of students of lower reading ability in a control group who have not had such writing instruction.

DELIMITATIONS

This study was limited to investigation of the effect of writing instruction in only one rhetorical mode, exposition, and that instruction was further limited to only one type of exposition, comparison/contrast. In addition, the writing instruction which was administered as a treatment to the experimental groups was limited to one class session. The study was conducted using as subjects randomly selected high school sophomores who were enrolled in tenth-grade English classes and for whom reading scores were available.

LIMITATIONS

This study had two principal limitations. First, it used incidental groups rather than general random selection, although random selection from within these groups was used to achieve even numbers. Thus, there was always the chance that experimental and control groups were not equal since existing class units were used in either case. However, in an effort to minimize this potential problem, four different teachers were used within each treatment group, and the classes were randomly assigned to experimental or control treatments. The second limitation was that only one class session was devoted to the treatment, and it might be argued

that this minimal time is not sufficient for writing instruction to be thorough enough to affect reading ability.

DEFINITIONS

Terms frequently used throughout this study have been defined according to their usage herein:

Rhetoric is "the art or science of using words effectively in speaking and writing so as to influence or persuade; . . . the art of literary composition, particularly in prose . . ." (Webster's, 1957).

Rhetorical mode is one of the four types of prose composition, defined by purpose: description, narration, exposition, argumentation.

Exposition is writing with intent to explain.

Comparison/contrast is one type of exposition which is a prose juxtaposition of similarities in and differences between two subjects or events.

SUMMARY

Chapter 1 proposed and explained the need for an experimental study of the effect of writing instruction on reading comprehension. Although a direct correlation between certain kinds of writing instruction and student reading abilities has long been presumed by many English and reading teachers, very little empirical data are available to support this presumption. Thus, this study was devised

to test the relationship between such skills of high school sophomores. The independent variable was writing instruction while the dependent variable was posttest reading comprehension scores. This chapter presented both the research hypotheses and some definitions pertinent to the study.

Chapter 2

REVIEW OF THE LITERATURE

The study of discourse is not new, having provided nearly the total curriculum of the Greek and Roman schools of classical antiquity. Such study was at that time divided into three main functions: the literary, the persuasive or rhetorical, and the dialectical. Composition, taught in very rigid, stereotyped patterns, was considered a preparation for the study of rhetoric and was thought to consist of certain basic modes, such as narrative, description, eulogy, and definition (Kinneavy, 1971, pp. 6-8). But while the study of discourse itself is not new, such ancient studies were conducted in Latin and Greek. European college and university studies in composition and rhetoric were conducted in Latin and Greek throughout the Middle Ages and into the modern era, there being introduced a professorship in English at Oxford University only as late as 1873 (Kinneavy, 1971, p. 5).

Kinneavy, in his book A Theory of Discourse (1971), views the modes of discourse as one subdivision of pragmatics and points out that the modes of discourse began to dominate educational aims during the nineteenth century, a substitution of means for ends which had "pathological" results academically (pp. 28-29). In other words, to successfully teach the modes of discourse, it is necessary

to keep purpose clearly in mind. Mullican, in his unpublished manuscript, points out that Kinneavy views comparison as one sort of classification. He also warns that according to Kinneavy, ". . . the major kinds of discourse are not discrete entities, but functions that may exist in any piece of discourse. An awareness of this fact will aid in the accurate classification and evaluation of any discourse and will be of assistance in critical listening, reading, and thinking" (Mullican, n.d., p. 24).

Additionally, Kinneavy, Cope, and Campbell, in Writing: Basic Modes of Organization (1976), discuss in the first chapter the philosophical basis of the modes of discourse. They point out that each of the modes is actually a particular way of looking at reality. Thus, "the modes . . . are the meaning components of whole themes; in a way they tell us what whole discourses are about" (p. 11). The implications of these statements are great: not only is the knowledge of the characteristics of the modes of discourse necessary for reading comprehension, but reading teachers must also be aware that they are teaching new ways of looking at reality, that in fact they are changing world views.

In a similar vein, Walter Ong (1982a), in his book Orality and Literacy: The Technologizing of the Word, echoes many of the same ideas as McLuhan, in that he believes that literacy leads to different sorts of thought patterns: "Abstractly sequential, classificatory, explanatory

examination of phenomena or of stated truths is impossible without writing and reading" (pp. 8-9). In his excellent article, "Reading, Technology, and Human Consciousness," Ong (1982b) discusses a philosophical framework for examining the influence of literacy on human consciousness. He explains that "all human communication is an interiorizing operation. . . . [for] human communication proceeds from the interior consciousness of one human being to the interior consciousness of other human beings" (p. 182). Further, he points out that

> writing and reading are not only deeply involved in this always intensifying interiorization process that marks the evolution of consciousness but are also in fact a part of the process. Without writing and print the interiorization of consciousness that marks modern man could not have taken place. (p. 181)

Ong emphasizes the fact that only the advent of reading and writing and print made analytic thinking processes possible. Thus, causal, logical, and analytically sequential thought "constitutes a new kind of noetic structure, not realizable until the mind had interiorized writing, made writing part of the support and fabric of its own intellectual procedures" (Ong, 1982b, pp. 186-187).

As a practical illustration of the veracity of Ong's theories, Frank D'Angelo (1982) reviews the research of A. R. Luria, which was conducted in the 1930s but which was unavailable in English until 1976. Luria's study of literate and nonliterate Russian peasants indicated that the acquisition of literacy alters man's perception and his cognitive functioning, so that perception surpasses sensory

experience and is classified according to abstract linguistic principles while cognitive activity becomes more abstract and theoretical. Only with literacy does propositional thinking become possible, so that man is able to use and distinguish between such cognitive modes as classification, comparison, cause and effect, and deduction.

In an article discussing composition and related fields, Kinneavy and Kline (1976) examine the relationship of composition to reading:

> It is . . . not unreasonable to continue to postulate the importance of: (a) understanding the structure of a passage, and (b) answering questions in the act of reading; since the relationship of these two factors to writing is obvious, the two factors provide the two most basic interrelationships between reading and writing. (p. 262)

Like Kinneavy, Moffett (1968), in his book Teaching the Universe of Discourse, sees the three elements of discourse as the speaker, the listener, and the topic. However, as Roger Brown points out in the introduction to this book, Moffett believes that the theoretical study of language is "probably completely irrelevant to the development of skill in the use of the language" (p. vii). Moffett believes very strongly in the study of language for a definite purpose, as opposed to studying it as object. Comprehension and interpretation, he says, lie within the relationship between listener or reader and the subject. Further, he suggests the importance of organizational patterns in discourse: "As for reading, it may well be that abstractive limitations hit children more in connection with

individual concepts and statements than with total continuity, since all a reader has to do is follow organization" (p. 56). For those who question the value of writing instruction, he points out that "a student writing in all the same forms as the authors he reads can know literature from the inside in a way that few students ever do today" (p. 7), although he believes students should read certain kinds of essays before attempting to write them. Finally, Moffett proposes that "both reading and writing are at once shallow mechanical activities and deep operations of the mind and spirit" (p. 15). Thus, the rhetorical modes of discourse represent at the same time a surface organizational structure which good readers and writers must be able to recognize and manipulate and a deep cognitive process which is linear, sequential, and logical.

Joseph Grimes (1975, 1978), in his books The Thread of Discourse and Papers on Discourse, defines rhetorical propositions as those propositions "whose arguments are not related to their predicates via semantic roles" (1975, p. 207) and indicates that their main function is to organize the content of discourse. One sort of relationship between propositions Grimes calls restatement, and this is further subdivided into two groups, equality of class (series, progression, alternatives) and equality by support (negative-positive, general-specific, fact-interpretation, way-end, and comparison). Comparison, then, is viewed by Grimes as one pattern for the organization of discourse in

which support is generated for the main idea, in this case presumably, by an examination of similarities and differences.

Morris Finder (1971), like Kinneavy and Moffett, believes that the purpose of discourse is to produce effects upon the reader or listener, to inform, persuade, or please. Reading comprehension, he says, is "a process of inferring from a discourse (1) the desired effects, (2) the causes or what is within a discourse that produces the effects, and (3) the relations between the effects and their causes" (p. 615). He points out that "there are obvious relationships between reading and writing and explication of the skills of writing sheds further light on those of reading" (p. 616). Finder also indicates a number of implications for instruction, curricula, and research. Pointing out that the principles for the construction of prose and the comprehension of it are neutral in values and everywhere the same, he says:

> there is no logical or empirical reason for the notion that there is or must be a sequence for teaching the skills of reading and writing. Our everyday experience suggests that whenever one is writing to affect a reader or reading perceptively, he is using, consciously or unconsciously, all the tasks of comprehension and, for writing, all the tasks of purpose and product. (p. 618)

He continues by explaining that comprehension does not mean that the reader experiences the intended effects, only that he perceives what they are, and that comprehension skills may be taught in any number of ways as long as the relationship between parts and purpose is established.

Karl Taylor (1978), in his article on remedial writing instruction, says that most people need to be taught rhetorical modes such as comparison and classification in order to reach a formal level of cognitive functioning. He conducted a study to investigate the cognitive skill development of average college freshmen and to discover whether intensive practice would improve summarizing skills. The results of this study indicated improvement in the subjects' ability to grasp and reflect intended meaning. Similarly, Taylor (1984) notes that "successful [readers in his study] had a way of standing back from the texts and seeing objectively how the pieces were organized" while "when the unsuccessful writers [of summaries] did not spontaneously point out the structure of what they read, I found that they were unable to draw generalizations from the text" (p. 390). Thus, both theory and research seem to indicate that the study of rhetorical modes is related not only to improvement in reading and writing skills but also to improvement in cognitive skill development.

Some very useful discussions present only detailed reviews of the literature concerned with reading and writing. Patrick Groff (1977) has written a summary of works concerned with the relationship between oral language and reading. Timothy Shanahan (1980) presents an excellent review of works in several areas of reading and writing relationships. He indicates that several studies confirm the view that good readers are better writers while some

other research suggests that reading programs which have writing components are more successful than those which do not. Shanahan cautions that there is a clear possibility that reading and writing skills are related only because of general intelligence or general language ability and thus have no causal relationship, showing the need for empirical research in this area.

Shanahan says that, according to Nila B. Smith, the earliest proponent of using writing activities for reading instruction was David B. Torver, in his book The Gradual Primer, printed in 1853. Several more recent researchers believe that writing enhances reading comprehension because it increases word recognition, Shanahan reports. He also indicates that some believe writing increases sight vocabulary, that it increases memory for words, and that it fixes the orthographic-phonemic patterns of words in memory. Shanahan reviews the work of other researchers who have investigated the influence of writing on reading comprehension because they felt that working with ideas in written discourse will increase a student's ability to synthesize, abstract, and analyze written materials. He summarizes:

> Among those who propose a comprehension effect, there is some disagreement as to whether the influence of writing on comprehension is mediated by growth in linguistic-conceptual precision, increased awareness of grammatical structures or improved understanding of textual organization strategies. . . . [If reading and writing both involve the structuring of meaning, then] this suggests the possibility that the manipulation of organizational structures in writing could enhance the use of such structures in reading comprehension. By manipulating organizational patterns such as comparisons, cause and effect,

> enumerative order or chronological sequence, students might be able to increase reading comprehension and retention. Knowledge of text patterns does seem to enhance reading comprehension. (pp. 362-363)

Cramer (1982), like Shanahan, points out that "a substantial amount of professional opinion as well as experimental evidence suggest that the mental and language processes involved in the written production of materials are the same or very similar to those involved in comprehending written materials" (p. 80), and a number of other educators who are concerned with the relationship of reading and writing present suggestions for adapting their ideas to classroom use. Salvatori (1983) decries the artificial separation of the teaching of reading and writing, for "the division can be dangerous if it seems to suggest that the processes of the one activity, in theory and practice, are antithetical to the teaching of the other . . ." (pp. 657-658). Karen D'Angelo (1983) also reviews research which suggests that the development of writing skills can enhance the development of reading skills and suggests how the exercise of précis writing can improve textual comprehension. Fagan (1982), who discusses the cultural phenomena of perception and of dialect influence, advocates the use of the language experience approach to teach the language arts in an integrated fashion. He also lists many activities designed to improve reading and writing activities simultaneously.

Collins (1981) conducted an experiment in reading instruction with remedial college students. The control

group received a regular reading lesson while the experimental group, in addition to having the same regular lesson, wrote daily. This writing was ungraded, expressive, journal-type writing. She found that students who write "begin to see relationships, connections, and ideas which once were elusive and abstract" (p. 6). Further, she feels that "students who are able to organize their thinking on paper . . . are in a better position to understand another writer's organization of ideas" (p. 7). Still, Collins believes that the reading-to-writing relationship must be made explicit to students.

Basing their work on the theories of Joseph Grimes, Dubin and Olshtain (1980) present a three-part model of the interrelationships between the reading and writing processes. These three parts of their model are rhetoric, textual discourse, and English as a second language (ESL) research. They emphasize the cultural nature of the logic on which text structure is based and point out that the ability of the good reader to adjust to writing styles presupposes a familiarity with textual styles. Thus, they suggest specific kinds of writing instruction to teach ESL students text structure in order to enhance their reading comprehension.

In Newkirk's (1982) book, Understanding Writing: Ways of Observing, Learning, and Teaching, K-8, he suggests that "it seems plausible that a writing program that constantly asks students to make judgements as to clarity,

completeness, order, interest, and consistency will have a beneficial effect on all reading [because it] teaches them about the status of written language" (p. 116). In other essays in this book, Fleming (1982) says that "in order for children to learn about written language, they need to experiment with the elements to discover the controlling principles, [since] writing is thinking" (p. 102), and Callahan (1982) reported that allowing students to write responses to stories increased their comprehension of the stories, while Giacobbe (1982) presents a case study of a first grader whose writing experiences taught him to make critical judgements.

Interestingly, two studies have dealt with the adverse effects of poor writing. Chambers (1981) discusses some problems with text comprehension when the basic informational structure is impossible to identify because of text complexity or poor writing. Kintsch and Yarbrough (1982) have found in their study that the quality of the rhetorical structure of texts influenced the quality of text comprehension but not the student's ability to process sentences, as tested by cloze scores. Thus, they have shown that these two aspects of reading are independent of one another. Their studies indicate that well-constructed texts are easier to comprehend, but they do not indicate anything concerning the reader's awareness of textual organization.

A few studies are concerned with various modes of discourse and writing abilities. Nichols (1980) explains a program in which paragraph frames were used to increase writing skill. These paragraph frames were extended cloze procedures in which the basic structure and transition words were provided while content words and phrases had to be inserted. They used various modes, such as comparison and cause-effect, for these exercises. San Jose (1974) studied the syntactic differences among narration, exposition, description, and argumentation and the relationship of the differences to IQ, sex, and reading comprehension. Her results showed that the mode of writing affected the length and incidence of syntactic structures, but no relation was found among mode and IQ, sex, or reading comprehension. Similarly, Heil (1976) studied the relation between written language variables in narration and exposition and reading comprehension abilities. The two language variables included the mean length of T units (thought units, developed by Kellog Hunt, roughly equal to a clause) and the number of sentence-combining transformations occurring in the total number of T units. Her results indicated mostly significant correlations between reading comprehension and the several variables.

Two authors who have advocated writing instruction in reading programs are Bormuth (1977) and Odum (1980). Bormuth sees such combined programs as ones which will make the most effective use of educational resources. He feels

that "overemphasis on either leaves us just as poor but a lot less literate than we could have been" (p. 4). Odum is in favor of combination programs from the very introduction of printed materials onward. She believes that "children want to write before they want to read. They are more fascinated by their own marks than by the marks of others. Young children leave their messages on refrigerators, wallpaper, moist windows, sidewalks, and even on paper" (p. 7). Arnold (1981), Hitt (1981), Green (1979), and Scofield (1980) all present suggested activities for classroom use which will integrate writing into reading programs. Moxley (1984) goes so far as to suggest a compositional approach to reading instruction. He points out that writing implies reading and that "composing and editing a text may involve sophisticated responses to multiple levels and sources of context control" (p. 640), as opposed to the much simpler task of copying too often found in language arts programs.

A few general studies have been concerned with writing abilities and reading comprehension levels of college students. Abartis and Collins (1980) studied the writing courses at Southern Illinois University to find whether students improved their reading or writing skills as a result of the courses. Their review of the literature indicates that several studies have found positive correlations between achievement in one language skill and achievement in another. The results of their own study

showed that all students improved their reading skills but that no one type of course produced more improvement than any other. Flynn (1980) reports that a study of two groups of students at Ohio State University who were either given weekly study skills sessions and kept journals or were given programmed reading lab materials revealed that both groups improved their reading abilities. Coomber (1975) studied college students' ability to identify the main ideas of paragraphs. Using freshmen at Concordia College, he found significant differences between groups categorized as poor, average, and good readers. Still, he reports that the number of errors committed by the best readers indicated that most college students are not good at the larger elements of comprehension.

Much of the most recent empirical research on the relationships between writing and reading comprehension has been concerned with sentence-combining studies. However, much of this research has produced contrary results. For example, McAfee (1981) found that sentence-combining activities improved reading comprehension while MacNeil (1982) did not find any conclusive evidence of a positive effect. Heinhold (1981) suggests activities for classroom use. Klein (1980) lists suggestions for teachers and reviews some of the pertinent literature. Callaghan (1977) and Sullivan (1977), in parallel doctoral studies at the University of Buffalo, both examined the effects of sentence-combining activities on the syntactic maturity, quality of

writing, reading ability, and attitudes of students. They found no significant gains in reading; gains resulted only in the length of T units. Two other unpublished doctoral dissertations which deal with sentence combining and reading comprehension are those of Combs (1975) and Phelps (1978). Combs found that the experimental group did not exhibit any significant difference from the control group on the reading comprehension posttest using the Gates-McGintie instrument. However, on a specially constructed reading test of the same materials, the experimental groups scored significantly higher. Combs asserts that "this study reaffirms that standardized reading measures can be insensitive to specific gains in reading comprehension and rate . . ." (n.p.). Phelps, using reading comprehension pretests and posttests consisting of a fifty-item cloze plus an author-designed comprehension multiple choice test with twenty-five literal and twenty-five interpretive items, found no difference between treatment and control groups. White and Karl (1980) present a general review of sentence-combining studies. They report that

> results of studies which have attempted to determine the effects of sentence-combining activities on writing and reading comprehension point to the possibility of a symbiotic tracking technique--one which clearly reveals the interrelationships of reading and writing in the communication process. Sentence-combining studies have consistently recorded significant gains in writing improvement at all levels. . . . Reading comprehension gains are not nearly as dramatic; however, fewer studies have been undertaken in this area. (p. 226)

A few studies whose concerns are closely related to the concerns of the present study have been carried out.

Maat (1977), in his unpublished doctoral dissertation, tried to answer these questions: (a) Will improvement in comprehension of expository and argumentative prose be accompanied by an improvement in the writing of same? (b) Can significant correlations be found between students' skills in comprehension and the corresponding writing skills? (c) Can significant correlations be found between sets of comprehension skills and sets of writing skills? Maat used as subjects eighty twelfth graders enrolled in college preparatory high school classes. The experimental group received instruction in reading comprehension skills which was based on an Aristotelian four-cause model utilizing both reading and writing; the control group did typical writing exercises. Maat found a significant gain in reading comprehension scores for the experimental group.

Several other studies dealing with reading comprehension and prose structure have approached the relationship from different perspectives. Shanahan (1981), in a paper presented at the annual meeting of the International Reading Association, discussed the results of a study which attempted to measure the relationship between learning to read and learning to write at the elementary level. His findings suggest that for children who are reading below third grade level, the relationship is only one of word-recognition production or spelling. "For proficient readers, fifth grade level or above, the relationship is more a reading comprehension-prose

production relationship. Relationship at this level is based largely on the vocabulary complexity of children's writing" (p. 1). Shanahan feels that the implications of his study are these: (a) that reading and writing each require the learning of unique skills, (b) that similar skills develop in different sequences, (c) that the relationship between reading and writing accounts for less than half the variance in reading and writing achievement, (d) that there is a demonstrated need to teach both reading and writing, and (e) that the nature of the reading and writing relationship changes over time. He asserts that "the experiences of utilizing complex vocabulary in composition and the structuring of ideas through writing seem to provide new avenues to reading achievement" (p. 15) and suggests the need for more studies of reading in conjunction with spelling, word sorts, word lists, modeling and rewriting activities as well as the insertion of experimentally validated activities which combine reading and writing into established reading programs.

The recently popular schema theories are closely linked to the theories of metacognitive knowledge and of text structure. Michael Strange (1980) considers the instructional implications of such theories to teachers of reading comprehension. He suggests that "we are in need of order when it comes to teaching children to comprehend what they read" (p. 391). He deplores the teaching of skills as discrete behaviors and the tendency of most teachers to

ignore theory in favor of practical suggestions. He reviews the basics of schema theory and suggests the following: (a) the importance of pointing out relevant schemata in prereading instruction, (b) greater emphasis on vocabulary instruction, (c) greater emphasis on text-to-schema inference, (d) less attention to detail questions, (e) helping students to develop story grammars, especially because these are culture-specific, (f) developing dialogue between schema and text, (g) and understanding the schema-related reasons for the misunderstanding of texts. In closely related research, Kintsch and Greene (1978) found that readers write better summaries for stories when they have a matching schema and that when sequential recall of a story deviated from the subjects' story schema, the subjects' recall performance was poor. They, too, indicate the culture-specific nature of story schemata.

Gordon and Braun (1982) also studied children's use of story schemata and found evidence that children employ the same story schemata to comprehend text that they use to comprehend oral literature. Their research indicates that a story schema is a transferable framework which a student can employ to comprehend new but similarly organized materials. Stewart and Tei (1983), in a more general article, present a concise review of the available research concerned with metacognition and reading, taking care to differentiate between cognition and metacognition. They suggest that "learning about the organization of ideas in

expository writing help[s] children predict and comprehend larger elements of passages" (p. 41).

Another proponent of the schema theory is Lea McGee (1982b), who points out the importance of the metacognitive knowledge of text structure. She feels that such knowledge "refers to a more conscious awareness of how structure is used in text-related tasks" and that it "has been shown to correlate with differences in recall" (pp. 64-65). Her own experimental studies seem to indicate that the child's ability to utilize text structures depends upon his developmental stage, since the older children in her study were more able to use structure to organize compositions than were the younger ones. McGee also discusses this same experiment in another article in the Reading Research Quarterly (McGee, 1982a). In this work, she found a significant statistical link between the ability to use text structure and the amount of information recalled. McGee concludes:

> . . . it seems teaching students to write well-organized text may be important in developing effective reading strategies. However, caution must be taken in drawing this conclusion. . . . Teaching students to create structures based on only one rhetorical grammar would be an over-simplification of the implications of the present study. Rather, helping students write in any more organized fashion to suit their various purposes in composing may help them learn to note and use many different organizational patterns as they are reading. (p. 69)

Anthony Petrosky (1982) approaches the reading-writing connection from the position of the teacher of literature. He points out that although the theorists

in reading research, composition studies, and response-oriented criticism all use different terminologies, they have all reached essentially the same conclusion: "that our comprehension of texts, whether they are literary or not, is more an act of composition . . . than of information retrieval, and that the best possible representation of our understandings of texts begins with certain kinds of compositions, not multiple-choice tests or written free responses" (p. 19). He sees the three criteria for comprehension as the reader's models of reality (or schemata), the text, and the context. Berating the usual and unnatural separation between instruction in reading and writing, Petrosky argues for the necessity of requiring students to write about the texts they read in order to increase their comprehension of such texts, as well as of their awareness of their own comprehension levels. Similarly, Linden and Wittrock (1981) present the results of their study of the effects of a model of generative learning on the reading comprehension of fifth grade children. This model, which is quite like the schemata theories of other reading researchers, purports to teach the generation of associations by "inducing learners to generate text-relevant summary sentences, headings, inferences, main ideas, critical comments and evaluations" (p. 45). The reading comprehension of the experimental group was significantly higher than that of the control group.

Tierney and Pearson (1981) have developed a schema theory of comprehension because they see the reader's background knowledge and purpose for reading as being the primary arbiters of meaning received from text. They also note the lack of "many worthwhile teaching practices for developing or improving comprehension," (p. 1), noting that those commonly used have little to do with either the reader's schemata or purpose. Schema theory is useful in determining whether a reader (a) has relevant schemata for understanding a text, (b) engages the appropriate schemata during reading, (c) exhibits flexible processing across different texts read for different purposes, (d) understands texts adequately, and (e) recognizes how to transfer such knowledge to other reading situations. Tierney and Pearson believe that reading comprehension results from a constant refinement of a model or scenario proposed by the reader. Thus, they suggest that students need a general program of schema development. It may be inferred, then, that an understanding of rhetorical modes should provide part of the schemata which students require in order to understand prose. They suggest both the use of directed reading activities and the development of diagrammatical representations of the text.

Closely related to these suggestions is the work of Ester Geva (1981) and of Bonnie Armbruster and Thomas Anderson (1981), all of which has to do with the mapping or flowcharting of reading passages. Geva conducted two

studies, both of them using less skilled readers as subjects. These subjects were taught to construct flow charts that represented the hierarchical elements of texts. All later displayed a significant improvement in reading comprehension as measured by the Nelson-Denny Reading Test. Geva points out that "knowledge of text structure and text structure markers seems to constitute components of prior knowledge that facilitate reading comprehension. The purpose [of this study] was to examine the instructional potential in training less skilled readers to distinguish content from structure . . ." (p. 5). She also suggests that such text mapping techniques are instrumental in raising the reading comprehension of students with lower grade point averages. Similarly, Armbruster and Anderson demonstrate that text mapping illustrates seven basic relationships: example, property, comparison, causal, temporal, enabling, and conditional. This technique, they say, was originally developed from the rhetorical ideas of unity, order, and coherence as an aid to study and as a measure of text comprehensibility.

Closely related to text mapping is Barbara Taylor's (1982) study in which study skills form the basis for a "hierarchical summary procedure that directs . . . attention to the organization of ideas in content textbook selections" (p. 202). Her method requires writing as well as reading, for it combines the SQ3R method of reading with outlining and with the generation of topic sentences for materials

read. She also includes an oral retelling by students of what they have learned from reading. Her studies indicate that this procedure has a positive effect on the reading recall of elementary school children. Similarly, M. C. Wittrock (1983) combines the SQ4R method of reading with the schemata theory to produce a "cognitive model of reading comprehension as a generative process" (p. 600). He points out the similarities between writing, which is commonly acknowledged to be a generative process, and reading, which requires the generation of meaning by relating texts to knowledge and experience. His studies indicate that the act of generation is more important for student learning than the type of generation students are required to do.

Barbara Taylor (1980) also describes an experimental study in which she investigated the relationship of reading ability and age to the subjects' ability to recall and to their sensitivity to text structure. The better recall of the good readers appeared to depend, at least in part, on their more extensive use of text structure. Taylor suggests that "following the organization of ideas in expository text is one important factor which facilitates recall" (p. 399) and suggests that teachers of upper elementary students should, therefore, teach students to perceive such textual organization by teaching outlining and noting the top-level structure of texts. However, Allen (1982), in the results of a survey of student attitudes toward writing, found that better readers needed text structure less than did poor

readers and that there was a significant correlation between student attitudes toward writing and reading comprehension scores.

In her most recent study, Barbara Taylor (Taylor & Beach, 1984) studied three groups of seventh graders who had been randomly assigned to an experimental group which received instruction and practice in her hierarchical summary procedure (elsewhere also called mapping and flowcharting), a control group which received a conventional lesson in reading, or a control group which received no special instruction in reading at all. The students received these lessons for seven weeks prior to the posttest. The results of the study indicated that the summary procedure lessons increased the students' recall of unfamiliar social studies materials, but that both of the reading lessons helped equally to enhance students' recall of familiar materials.

Perhaps most closely related to the investigation of this study is the work of Bonnie Meyer (1977, 1979a, 1979b, 1982, n.d.; Meyer, Brandt & Bluth, 1978, 1980; Meyer & Freedle, 1980; Meyer, Rice, Knight & Jessen, 1979). In Schooling and the Acquisition of Knowledge (1977), she discusses her prose analysis technique which she has derived from the work of Fillmore (1968) and Grimes (1975). She describes this technique which results in tree structures of the ideas of prose passages, those ideas which are more important being at the top and others following in order of

descending importance. This structure differs from the traditional outline in that it contains all the ideas of a passage, it specifies the relationships among ideas, and it uses the semantic grammar of propositions, this latter characteristic developed from Grimes. As noted earlier, comparison is one subdivision of the rhetorical predicate, and Meyer says that "the rhetorical predicates frequently appear at higher levels in the structure of a passage, representing intersentential relationships" (1977, p. 181).

Meyer has conducted several studies which have dealt with the relationship between the organization of prose and the recall of it by readers. One of these studies was reported in a paper at the annual meeting of the Conference on College Composition and Communication (1979a). In her research, 300 ninth graders read four passages organized according to four kinds of writing plans: antecedent/ consequent, comparison, description, response. Immediately after reading and also one week later, the students wrote summaries of what they remembered. These summaries, called recall protocols, were scored for the amount of correct information they contained and were checked to see whether their organization matched that of the original reading selection. Those who used the author's method of organization remembered more that those who did not. Then these ninth-grade students were taught to identify overall writing plans, and it was found that this instruction

> led to significantly increased identification of the overall writing plans in a text and [their] use in recall protocols. In addition, the amount of information recalled by the instructional group in each of the posttest sessions was nearly double that of both their pre-instruction scores and the scores of the control group for all testing sessions. The study showed that ninth graders can be taught to recognize overall writing plans and that this instruction improves their reading comprehension. (Meyer, 1979a, p. 7)

Meyer replicated her study with varied age levels, including junior college and graduate students. The instructional phase of her research concentrated on the overall writing plan of comparison because it was with this plan that students demonstrated the greatest overall recall.

In another study, Meyer (1979b) tests whether the ability to follow the structure of a text is an important reading skill. Her review of her earlier research indicates that top-level prose structure influences recall and retention of text material. Meyer once again points out that these top-level structures depict the rhetorical patterns used by the author. However, she renames the rhetorical structures as follows: (a) response, (b) adversative, (c) covariance, and (d) attribution. Her research (Meyer, Rice, Knight, & Jessen, 1979; Meyer & Freedle, 1980) revealed that adversative and covariance prose structures resulted in better comprehension than did attribution structure, as she also suggests in her article "Structure of Prose: Implications for Teachers of Reading" (Meyer, n.d.).

Meyer also briefly reviews schema theory and suggests that expository rhetorical or top-level patterns

are one sort of schema that has been studied less than narrative. It is her view that such schemata are more general and more abstract than are the schemata for particular objects and that they function in much the same manner as an outline, leading a reader to expect certain things in the text. This top-level structure or schema, then, becomes a code between writer and reader which leads to successful communication of the message.

Meyer's (1978) experiment with Brandt and Bluth tested the use of top-level structures with ninth graders. This study indicated four discoveries about the students' use of these structures: (a) less than half the students made use of the structure strategy; (b) good readers used the strategy and poor readers did not; (c) students who used the strategy recalled a great deal more than those who did not; (d) students who used the strategy could differentiate between information that was consistent with the topic and that which was not. A later, unpublished study by Meyer, Bartlett, and Woods in 1978 found that the same behavior was evident among college students. These studies are also discussed in great detail by Meyer, Brandt, and Bluth (1980) in the Reading Research Quarterly.

Additionally, Meyer (1982) relates reading research to instruction in writing. Her article in College Composition and Communication indicates the importance of the three functions of organizational plans for a writer: (a) topical function, to organize main ideas;

(b) highlighting function, to differentiate between main and supporting ideas; and (c) informing function, to present new information without dismissing the already known. She also presents the merits of five organizational plans, which she here calls antecedent/consequent, comparison (divided into alternative and adversative), description, response, and time-order. Her research seems to show that both the antecedent/consequent and the comparison plans provided students with better recall than did the descriptive plan. She also found that rewriting of content according to a different organizational plan caused students to recall different facts. Finally, Meyer suggests the need for an integrated pedagogy of language instruction:

> [Research evidence] indicates a need to gear reading instruction around identification of plans, so that readers can effectively learn and remember the materials they study. Second, it indicates a parallel need in writing instruction, so that writers can offer readers this support in some recognizable way (pp. 39-40). . . . Attempts to correlate the two research domains have become prominent only recently. It is to be hoped that this trend will become stronger and more productive in the coming years. (p. 47)

Similarly, the research of Hiebert, Englert, and Brennan (1983) echoes many of the findings of Meyer, though it also disagrees in some respects. The purpose of Hiebert's study was to examine the knowledge of text structures used by college students in order to discover whether these students were more aware of some text patterns than others, to see how performance on comprehension measures matched the use of text structures, and to investigate the relationship between use of these structures in reading and writing

activities. The four text structures used in this study were description, sequence, enumeration, and comparison/contrast. Generally it was found that high ability students performed better than low ability ones, as might be expected, and the correlations between reading and writing measures were significant for all text structures except description. In this study, then, "students' writing performance--measured in terms of their ability to generate sentences compatible with the prevailing text structure--was a better predictor of reading achievement than their ability to recognize details consistent with text structure" (p. 75). However, this study's analysis of the writing task also determined that comparison/contrast was significantly more difficult than other text patterns, a finding contrary to the work of Meyer and Freedle (1980). These authors conclude that

> the fact that sensitivity to text structure was positively associated with achievement suggests the need for instruction in these structures. There is sufficient evidence to indicate that "telling" students to use text structures is not helpful; some type of direct instruction in using text structure is much more helpful. . . . Attention needs to be directed to issues such as the degree to which instruction in one modality affects students' performance in the other and the types of tasks which should be used for instruction. (p. 77)

Thus, recent research not only points to a close correlation between reading and writing abilities but also to the importance of the role that the understanding of prose structure plays in reading comprehension. It has been demonstrated that text mapping and recognition of top-level structure lead to increased reading comprehension. The next step, then, seems to be to discover whether text production

will produce the same desirable effect.

SUMMARY

Chapter 2 has presented a general review of some important discussions of the modes of discourse, discussions developed by Kinneavy, Moffitt, and Grimes. It has also reviewed current research concerned with the relationships between reading and writing skills. Specific studies reviewed here have dealt with the relationships between sentence-combining activities and reading comprehension or between prose organizational structures and reading comprehension. In this area, the recent work of Bonnie Meyer was emphasized. Meyer's work has demonstrated that text mapping and recognition of top-level prose structure lead to increased reading comprehension in students who have been taught these skills.

Chapter 3

PROCEDURES

RESULTS OF THE PILOT STUDY

The pilot study was conducted with a sample of twenty-six ninth-grade students in two lower track English classes at the University School of Indiana State University in Terre Haute, Indiana. The students were first given the Stanford Diagnostic Reading Test, Brown Level, Form A, Subtest One (1976), in order to determine average reading comprehension levels for each class. Then each class was randomly divided into experimental and control groups. The experimental groups received a lesson in writing comparative paragraphs while the control groups worked on their regular English class assignments with their regular teacher. Finally, all subjects took a comprehension test written by the researcher. It was found that within each class, the experimental group exhibited significantly higher comprehension scores. A complete report of the pilot study is appended (Appendix A).

Some problems which arose with the pilot study have influenced the design of the present, broader study. First, because the researcher presented the writing lesson to the experimental groups while the control groups had no special lesson, the Hawthorne effect could have influenced the results. Second, because the control group received no

comprehension-enhancing lesson at all, it is difficult to attribute the significant results to writing instruction alone.

DESCRIPTION OF THE SAMPLE

The subjects of this study were 160 tenth-grade students in eight English classes at North and South Vigo High Schools in Terre Haute, Indiana. These classes were taught by two regular English teachers at each school, and each teacher taught one experimental and one control group. The tenth graders in the classes represent a heterogeneous grouping because all sophomores must take an English class. Students are assigned to these classes at random by a computer. Only a small percentage of the students in these schools are assigned to the upper track English classes, and these assignments are made on the recommendations of ninth-grade counselors who base their decisions on performance and testing records. Thus, this study contained no students with reading test scores in stanines one or nine. Although 221 students received the research lessons and took the posttest, the number used as subjects was reduced to 160 by omitting all tests on which there were no names, all students who had not completed one of the tests, and all students for whom no STEP reading scores were available, as well as by random selection to achieve equal numbers of higher ability and lower ability readers within each class group.

DESIGN OF THE STUDY

As described previously, this study employed incidental samples available as class units from which students were randomly selected as subjects. Class units were randomly designated as either experimental or control groups, there being four of each with each teacher having one control and one experimental group. Within each experimental and control group, the subjects were divided into higher ability or lower ability readers according to their reading scores on the Sequential Tests of Educational Progress (STEP) (1971) administered by the school corporation during the students' previous school year. Thus, the sample was divided into four basic groups:

	Experimental	Control
Higher Ability Readers	E_1	C_1
Lower Ability Readers	E_2	C_2

The treatment for the experimental groups consisted of a lesson in writing comparative paragraphs while the treatment for the control groups consisted of a lesson in which comparison and a comparative essay were discussed. Following the treatment, the comprehension posttest was administered to all groups. This test consisted of two parts, A and B, each of which consisted of an essay with accompanying multiple choice questions and a request for the subject to write a one-sentence statement of the main idea.

In each class, equal numbers of students were tested with A and then B and with B and then A, so that the order of the testing would not influence the comprehension scores.

INSTRUMENTS

Instrument Number One

The scores from the Sequential Tests of Educational Progress: Reading (1971), which had been administered by the school corporation during the previous school year, were used to identify higher ability and lower ability readers. According to a review in Reading Tests and Reviews (Buros, 1968) by Emmett Betts, this test is supposed to measure five comprehension skills: (a) recall, (b) inferences, (c) motivation of author, (d) analysis of presentation, (e) ability to criticize. It does not include any measure of organization, reading rate, purpose, word perception, or vocabulary. Betts suggests that it can be used to identify students at either end of a distribution (pp. 809-810). As a measure of validity, the STEP publishers claim that this test correlates with the SCAT at .80 (p. 811).

Instrument Number Two

The second instrument, or the dependent measure, had two parts, each being an essay accompanied by multiple choice comprehension items. Part A used Bruce Catton's essay "Grant and Lee" (1969), while Part B used a comparative essay by Richard Erdoes and John Lame Deer entitled "Green Frog Skin" (1975). Part A has a Dale-Chall readability

level of ninth-tenth grade, while Part B has a Dale-Chall readability level of fifth-sixth grade. To insure adequate reliability, this instrument was administered to a representative group of forty-six ninth-grade students, and the results were subjected to item analysis using the Statistical Package for the Social Sciences (SPSS) to determine the Cronbach alpha reliability coefficient. Items not contributing to the reliability of the instrument were deleted, and weak items were improved. A table of the statistical results of this test may be found in Appendix E. Similarly, a second item analysis was used to determine the reliability of the improved instrument used in this study, the results of which may be found in Table 1.

In addition, subjects were asked to write a thesis statement for the essay before answering the multiple choice items. To develop a procedure for scoring these responses, nine composition teachers in the Department of English at Indiana State University were asked to write a thesis statement for the two essays. Identical statements and paraphrases were then grouped together, and a thesis statement was thus developed for each essay, which contained ten elements. Thesis statements of students which contained identical or paraphrased elements, when compared with the master statement, were scored one while the others were scored according to the percentage of elements they contained. This procedure was derived from the work of Baumann (1981). Copies of both parts of this test, as well

Table 1

Final Item-Total Correlations for Multiple Choice Items

Test A[a]	
Item	Corrected Item-Total Correlation
A2	.35
A4	.26
A5	.35
A6	.50
A7	.10
A8	.33
A9	.47
A10	.32
A11	.33
A12	.43
A13	.38
A14	.21
A16	.30
A17	.29
A18	.51

[a]Alpha = .74

Test B[b]	
Item	Corrected Item-Total Correlation
B2	.26
B3	.26
B4	.40
B5	.36
B7	.31
B8	.27
B11	.26
B12	.40
B13	.20
B14	.37
B15	.42
B16	.46
B17	.31
B18	.33
B19	.34

[b]Alpha = .72

as the sentences used in scoring students' thesis statements, are appended (Appendixes B and C).

TREATMENT

Treatment for Experimental Groups

All students in the classes designated as experimental groups were instructed by their regular teacher in the writing of a comparison/contrast paper. At the beginning of the instruction, the teacher asked for two student volunteers. The names of these two students were put on the board. Underneath each were listed his or her descriptors: qualities, hobbies, physical characteristics, and so forth. Then the students identified similarities and differences from among the descriptors. Next, each student wrote a paragraph in which he first discussed all the similarities and then all the differences between the two student volunteers, following a model which the teacher had drawn on the board. Finally, the paragraphs were rewritten so that one student was discussed first and the other second, again following a model drawn on the board. Thus, by the end of the class period, the students had written two paragraphs, a point-by-point comparison and a whole-by-whole comparison. All steps were carried out in a game-like manner. The teacher helped individual students with their paragraphs as needed, giving advice on structure and organization. A lesson plan for this instruction is appended, as are instructions to participating faculty

(Appendix D). During the next class meeting, all subjects were given the comprehension test designated as Instrument Number Two.

Treatment for Control Groups

All students in the classes designated as control groups were instructed by their regular teacher in a comprehension lesson which involved the study of comparison and contrast text organization without the students' being required to write. Two student volunteers were selected from the class and compared as in the lesson for the experimental groups. However, instead of having the students write paragraphs, they were asked to read a comparative essay and discuss the comparative elements within it. A lesson plan for this instruction is appended (Appendix D). During the next class meeting, all subjects were given the comprehension test designated as Instrument Number Two.

DATA COLLECTION

The data for this study were collected by the four participating teachers at North and South Vigo High Schools. The comprehension posttests were scored blindly by the researcher during the spring semester of 1984. For the multiple choice items, a simple list of correct responses was compared with the subject's responses in order to arrive at a numerical score of items answered correctly. For the written thesis statement, the previously arrived at thesis

statement, divided into its elements, was compared with the subject's response in order to assign a score of one or less.

STATISTICAL TREATMENT

A *t* test was used to assess the effect of the experimental treatment. The effect of ability alone was of no interest in this study and was, therefore, not examined. Also, a *t* test was used to assess the significance of differences in score means between higher ability readers in the experimental group and higher ability readers in the control group; the same procedure was used to compare the score means of both groups of lower ability readers. Following the suggestion of Myers (1979), an alpha level of .0167 was used for each of these *t* tests to control the familywise error rate at the .05 level (p. 298).

SUMMARY

Chapter 3 described the sample used in this study, eight classes of tenth-grade students at North and South Vigo High Schools. It also described the research design, as well as the treatment and the instruments employed therein. Data collection procedures as well as statistical treatment of such data were discussed. Finally, this chapter also contained a summary of the pilot study.

Chapter 4

RESULTS OF THE STUDY

The results of this study are presented in this chapter in two sections related to the two dependent measures: results based on free recall statements of main ideas and results based on multiple choice comprehension items. The instrument used as a posttest was divided into Part A and Part B, each part developed to accompany a particular reading selection. However, A and B each contained two different comprehension measures: first, a free recall statement of the main idea; and second, multiple choice items. Thus, for the purpose of compiling results, the free recall data (Part A, item 1, and Part B, item 1) have been grouped together as have the multiple choice items from Part A and Part B. All tests of significance have been conducted at the $p < .05$ level.

RESULTS BASED ON FREE RECALL STATEMENTS OF MAIN IDEAS

Hypothesis 1

The first hypothesis to be tested read as follows:

When tested on their ability to comprehend comparison/contrast passages, students in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, as assessed

by free recall statements of main ideas, not significantly different from those of students in a control group who have not had such writing instruction.

A *t* test was used to compare the mean scores of the experimental and control groups on the first dependent measure--two free recall statements of main ideas. As seen in Table 2, no significant difference was found between the experimental and control groups on these free recall statements. Therefore, the first hypothesis was not rejected. It might be noted, however, that the mean score for the experimental group was higher than the mean score for the control group.

Table 2

Comparison of Experimental and Control Groups on Free Recall Statements of Main Ideas

	Number of Cases	Mean	Standard Deviation	*t* Value	DF	Probability
Experimental	78	.299	.152			
				1.36	158	.175
Control	82	.267	.142			

Hypothesis 2

The second hypothesis to be tested read as follows:

When tested on their ability to comprehend comparison/contrast passages, students of higher reading

ability in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, assessed by free recall statements of main ideas, not significantly different from those of students of higher reading ability in a control group who have not had such writing instruction.

A t test was used to compare the mean scores of these two groups on the first dependent measure--two free recall statements of main ideas. As shown in Table 3, in performance on the first dependent measure, there was no significant difference between the higher reading ability students in the experimental group and similar students in the control group. Therefore, the hypothesis was not rejected.

Table 3

Comparison of Higher Ability Readers in Experimental and Control Groups on Free Recall Statements of Main Ideas

	Number of Cases	Mean	Standard Deviation	t Value	DF	Probability
Experimental	39	.318	.147			
				.03	78	.977
Control	41	.317	.124			

Hypothesis 3

The third hypothesis to be tested read as follows: When tested on their ability to comprehend comparison/contrast passages, students of lower reading ability in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, as assessed by free recall statements of main ideas, not significantly different from those of students of lower reading ability in a control group who have not had such writing instruction.

A t test was used to compare the mean scores of these two groups of lower ability readers on the first dependent measure. As indicated by the results in Table 4, with regard to performance on the two free recall statements of main ideas, the lower reading ability students in the experimental group and similar students in the control group

Table 4

Comparison of Lower Ability Readers in Experimental and Control Groups on Free Recall Statements of Main Ideas

	Number of Cases	Mean	Standard Deviation	t Value	DF	Probability
Experimental	39	.279	.156			
				1.87	78	.066
Control	41	.217	.143			

did not differ significantly. Despite the absence of a statistically significant difference, the direction and magnitude of the difference that did exist should be noted.

RESULTS BASED ON MULTIPLE CHOICE COMPREHENSION ITEMS

Hypothesis 4

The fourth hypothesis to be tested read as follows:

When tested on their ability to comprehend comparison/contrast passages, students in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, as assessed by multiple choice items, not significantly different from those of students in a control group who have not had such writing instruction.

A *t* test was used to compare the mean scores of these two groups on the second dependent measure--responses to two sets of multiple choice comprehension items. As shown in Table 5, there was no significant difference between experimental and control groups in performance on the multiple choice items. Consequently, the fourth hypothesis was not rejected. However, it is important to note that the mean score of the experimental group was

once again higher than that of the control group.

Table 5

Comparison of Readers in Experimental and Control Groups on Multiple Choice Comprehension Items

	Number of Cases	Mean	Standard Deviation	t Value	DF	Probability
Experimental	78	18.62	4.78			
				1.39	158	.167
Control	82	17.52	5.15			

Hypothesis 5

The fifth hypothesis to be tested read as follows:

When tested on their ability to comprehend comparison/contrast passages, students of higher reading ability in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, as assessed by multiple choice items, not significantly different from those of students of higher reading ability in a control group who have not had such writing instruction.

A *t* test was used to compare the mean scores of these two groups of better readers on the second dependent measure. Table 6 shows that on the multiple choice comprehension items there was no significant difference between the performance of the higher ability readers in the

experimental group and the performance of similar students in the control group. Although the difference between these two groups of better readers was not statistically significant, the difference that did exist favored the experimental group.

Table 6

Comparison of Higher Ability Readers in Experimental and Control Groups on Multiple Choice Comprehension Items

	Number of Cases	Mean	Standard Deviation	t Value	DF	Probability
Experimental	39	21.05	3.99			
				1.77	78	.081
Control	41	19.29	4.83			

Hypothesis 6

The sixth hypothesis to be tested read as follows:

When tested on their ability to comprehend comparison/contrast passages, students of lower reading ability in an experimental group who have been taught to write comparison/contrast essays will demonstrate comprehension levels, as assessed by multiple choice items, not significantly different from those of students of lower reading ability in a control group who have not had such writing instruction.

A t test was used to compare the mean scores of these two groups of poorer readers on the second dependent measure.

As shown in Table 7, based on performance on the multiple choice items, no significant difference was found between poorer readers in the experimental group and poorer readers in the control group. Therefore, the sixth hypothesis was not rejected.

Table 7

Comparison of Lower Ability Readers in Experimental and Control Groups on Multiple Choice Comprehension Items

	Number of Cases	Mean	Standard Deviation	t Value	DF	Probability
Experimental	39	16.18	4.26			
				.41	78	.682
Control	41	15.76	4.90			

SUMMARY

Chapter 4 has presented the hypotheses of this study as well as the statistical data used in testing those hypotheses. None of the hypotheses was rejected. However, it was found that the mean scores of the students in the experimental groups were higher in all cases than those of the control group students.

Chapter 5

SUMMARY, CONCLUSIONS, AND IMPLICATIONS OF THE STUDY

SUMMARY OF THE STUDY

Statement of the Problem

The problem of this study was to investigate the influence of writing instruction on the reading comprehension of tenth-grade students. Although research has shown that instruction in the recognition of text structure can increase reading comprehension significantly and although it has been assumed that improvement in writing skill would improve reading skill as well, there has been little empirical research concerned with the actual influence of writing instruction. Thus, this study combined both ideas by attempting to determine the effect of writing instruction in text structure on reading comprehension.

Statement of the Procedures

This study employed eight classes of tenth-grade students taught by four teachers in two high schools. From these classes students were randomly selected to achieve even numbers of higher ability and lower ability readers within each class group. Each teacher taught one experimental and one control group, these class groups being randomly designated as either experimental or control. The

experimental treatment consisted of a lesson in writing comparison/contrast essays while each control lesson consisted of a reading comprehension lesson using comparative materials. All students received the same two-part posttest, which required them to write free recall statements of main ideas as well as answer multiple choice items. A series of *t* tests was used to compare mean scores of the experimental and control groups of higher and lower ability readers.

Hypotheses

Six hypotheses were developed to compare the scores of the experimental groups and control groups on the free recall statements of main ideas and on the multiple choice items, to compare the scores of higher ability readers in the experimental and control groups on both dependent measures, and to compare the scores of lower ability readers in the experimental and control groups on both dependent measures.

CONCLUSIONS

Although none of the tests of differences between experimental and control group posttest scores found those differences to be statistically significant, it is important to point out that in every case the mean scores of the experimental groups were higher than the mean scores of the control groups. Thus, a tendency was established which indicated the desirable effect of writing instruction in rhetorical text structure on the reading comprehension of

high school students.

Conclusions Based on Free Recall Statements

It had been predicted that the treatment employed in this study would be more effective with poorer readers than with better readers, and there was a tendency toward this insofar as the students' comprehension of reading selections was measured by their ability to write free recall statements of main ideas. Such a difference was predicted because it seemed obvious that better readers might have already learned to recognize text structure, as well as the transitional terms commonly used with such structure, from their past reading experience and that poorer readers might not have read widely enough to become aware of various text structures without having these explicitly pointed out to them.

Because the posttest in this study required students to write only two free recall statements, there was little chance that the differences between the experimental and control groups would be extremely large. However, the difference between poorer readers in the experimental and control groups on free recall statement scores approached statistical significance ($p = .06$), suggesting that the treatment received by the experimental groups made a difference in their ability to understand and reproduce the main idea of a reading selection. This finding is supported by those of Hiebert et al. (1983) and Meyer (1978, 1979a; Meyer & Freedle, 1980). Thus, it appears

that writing instruction which teaches poorer readers to recognize and reproduce text structure patterns may be able to improve their ability to perceive the main ideas of reading selections.

Conclusions Based on Multiple Choice Items

While it had been predicted that poorer readers would benefit more from the treatment than would better readers, this was not found to be the case when their responses to multiple choice items were compared. While no differences between the experimental and control groups on multiple choice items were found to be statistically significant, the greatest difference was found to be between better readers in the experimental and control groups, suggesting that better readers profited more from the writing instruction, as measured by their ability to answer multiple choice items, than did poorer readers.

It may possibly be argued that poorer readers showed more benefit from writing instruction in writing free recall statements than in answering multiple choice questions simply because the writing practice enabled them to codify their ideas on paper, whereas they otherwise could have been able to pick out only isolated details. However, the difference in benefit due to writing instruction that is shown between better and poorer readers may perhaps be one of degree rather than one of kind. It may be assumed that better readers were already capable of understanding main ideas, while such an assumption may not be made about poorer

readers. Therefore, poorer readers could display an improved ability in this area. On the other hand, heightened awareness of text structure may have enabled better readers to become more aware of comparative details, thus causing them to display an improved ability to answer more specific questions. Thus, poorer readers may improve or gain a general skill because of writing instruction, while better readers may simply be able to refine skills they already possess.

IMPLICATIONS

The implications of this study are two: (1) that writing instruction appears desirable as an instructional technique in reading education, and (2) that much more extensive research in this area is needed. First, it appears that writing instruction of the type employed in this study, that is, writing instruction which endeavored to teach recognition and reproduction of text structure, while placing little or no emphasis on surface characteristics of writing such as punctuation or spelling, deserves much more attention from reading and content area teachers than it receives at present. While writing instruction is often little used as an instructional technique because it is time-consuming in terms of class time used, homework time required of students, and evaluation time required of teachers, this research indicated that it can be an instructional technique of benefit to all readers.

Second, this study implied the need for more extensive research into the effect of writing instruction on reading comprehension. Specifically, one can conclude that there is a need to provide more than one day of treatment for experimental and control group lessons. Because findings of this study indicated a tendency for the experimental groups to profit from only one day of writing instruction, it seems reasonable to predict that a whole unit or a whole semester devoted to such a treatment would produce both statistically and educationally significant results.

Suggestions for Further Research

Several areas for further investigation are suggested by this study. First, and most directly, a need exists to replicate this study with treatment and control lessons taught over a longer period of time. The one lesson used for this research may have been too minimal to affect some students even for a short time. Second, a need exists to replicate this study using rhetorical modes other than comparison/contrast. Meyer (1979a; Meyer & Freedle, 1980) has used other text structures but has not used writing instruction as an independent variable. Third, a need exists to investigate further the different influences writing instruction has on the reading comprehension of better and poorer readers. This study indicated that such instruction affects these groups differently but provided no clear explanation of why that may be the case or what those differences are.

SUMMARY

Chapter 5 presented a brief summary of the statement of the problem and of the procedures employed in the study. It also presented the conclusions drawn from the data collected and suggested areas for further research into the question of the influence of writing instruction on reading comprehension. The main finding of the study was the tendency toward a beneficial effect on reading comprehension derived from writing instruction.

APPENDIXES

APPENDIX A

THE PILOT STUDY

AN INVESTIGATION OF ONE OF THE RELATIONSHIPS BETWEEN WRITING INSTRUCTION IN RHETORICAL MODES AND READING COMPREHENSION: A PILOT STUDY

by

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STATEMENT OF THE PROBLEM

INTRODUCTION

Just as speaking and listening are man's primary modes of communication, writing and reading are his secondary ones, parallel to the primary modes but having as their advantage the ability to communicate across time and space. And just as speaking and listening are natural functions for most people, writing and reading are artificial functions which must be taught in schools, functions which people do not learn without specialized instruction. Although the connections between writing and reading activities are important and obvious--one cannot read unless someone else has written something which may be read, for instance--the impact of proficiency in one area on the acquisition of proficiency in the other is only now under experimental investigation by educators.

Purpose of the Study

It was the purpose of this study to investigate one small area of impact between writing and reading skills: specifically to determine whether writing instruction in one of the rhetorical modes, namely comparison/contrast, would increase a student's reading comprehension of materials written in the same mode. Because the rhetorical modes provide not only a particular cognitive process but also a means of organization, it seems that the ability of the

student to perceive the particular rhetorical mode of a reading selection would greatly enhance his perception of the cognitive constructs of the author as well as the method of organization within the selection. Both abilities would, then, increase reading comprehension.

HYPOTHESIS

Thus, it was hypothesized that instruction in the cognitive processes and method of organization particular to a specific rhetorical mode, as well as the actual writing of a paper in that mode, would increase the ability of students to comprehend materials written in the same mode.

DELIMITATIONS

This study was limited to experimentation with only one rhetorical mode, exposition, and that mode was further limited to only one type of exposition, comparison/contrast. In addition, the study was limited to a small sample of ninth graders in slower tracked English classes. The slower tracked students were purposely chosen for this experiment because it was felt that their general levels of reading comprehension probably offered the greatest room for improvement. Since the purpose of this study was to measure reading improvement, the opportunity for that improvement must then exist. While this is not to say that faster tracked ninth-grade English students have no room for improvement, it is very likely that good readers may have already, consciously or unconsciously, mastered the ability

to discern rhetorical organization.

LIMITATIONS

This study was also limited by some other factors over which the investigator had no control: the ages of the students, fourteen through sixteen; the attendance of students on the days when the experiment was being conducted; and the lessons taught by the regular teacher between experimental sessions. Obviously, the students also brought their varied experiential backgrounds in reading and writing to this study.

DEFINITIONS

A few terms frequently occurring throughout this study are defined below according to their usages in this paper:

Rhetoric is "the art or science of using words effectively in speaking and writing so as to influence or persuade; . . . the art of literary composition, particularly in prose . . ." (Webster's, 1957).

Rhetorical mode is one of the four types of prose composition, defined by purpose: description, narration, exposition, argumentation.

Exposition is writing with intent to explain.

Comparison/contrast is a prose juxtaposition of similarities in and differences between two objects or

events.

PROCEDURES

Description of the Samples

The subjects of this investigation were twenty-six ninth graders at the Indiana State University School in Terre Haute, Indiana. These students were in two slower tracked English classes taught by the same teacher. Each class was randomly divided into experimental and control groups using a table of random numbers. Thus, the study resulted in four samples: E_1, C_1, E_2, C_2.

Design of the Study

This study employed a random sample, pretest, posttest design which may be represented schematically as follows:

E	C
pretest	pretest
treatment	--------
posttest	posttest

The pretest was given on a Friday, the treatment administered on the following Wednesday, and the posttest given on the Monday following the treatment to allow some regular lessons to intervene between experimental sessions.

Instruments

Two instruments were used in this study. The pretest employed the Stanford Diagnostic Reading Test, Brown level,

form A, subtest one (1976). This test was selected to measure the composite reading comprehension levels of the students in the sample because of its appropriate content and vocabulary. The Brown level, specifically designed for use with fifth to eighth grades, was selected because the regular teacher felt that these classes were at least two years below grade level in reading ability. Subtest one was used because it specifically measures reading comprehension levels. This test took thirty-five minutes plus the time required to give instructions and to distribute and collect materials, and so it was completed within one fifty-minute class period.

The posttest was developed by the researcher, there being no standardized tests of reading comprehension available in specific rhetorical modes. A copy of this text is appended (Appendix A). This instrument consisted of two comparison/contrast paragraphs written at the seventh grade level according to the Fry scale (1978), a method of arriving at reading levels by counting the numbers of syllables and sentences per 100 words in a reading selection. The following table gives the counts for each paragraph of the posttest: Each paragraph was followed by five comprehension questions, one inferential and four factual. The subjects of each paragraph had been generated during discussions with the experimental groups during treatment sessions. Because the reading comprehension pretest allowed thirty-five minutes to read and answer

sixty questions, the students were allowed a comparable time for the posttest, six minutes for ten questions.

Table 8

Posttest Syllables and Sentences per 100 Words

	Paragraph 1	Paragraph 2
syllables	138	136
sentences (per 100 words)	7.5	6.2

Treatment

Initially, all twenty-six students were given the pretest to determine the general reading levels of each group. The results of this test are presented in the following table:

Table 9

Mean Reading Comprehension Scores of Sample Groups

	Mean raw score	Grade level equivalent
Group 1 (N=15)	45	6.9
Group 2 (N=11)	49	7.7

Then the groups were subdivided into experimental and control groups. Those in the experimental groups stayed in their classroom with the researcher and were instructed in the writing of a comparison/contrast paper. Those in the control groups went to another room with their regular teacher where they worked ahead on class assignments. No attempt was made to have the students in the experimental groups write anything longer than a paragraph because of their inexperience with writing and because of the length of the class period, fifty minutes. At the beginning of the writing instruction, the researcher asked for two student volunteers. The names of these two students were put on the board. Underneath each were listed his or her descriptors: qualities, hobbies, physical characteristics, etc. Then the students identified similarities and differences from among the descriptors. Next, each student wrote a paragraph in which he first discussed all the similarities and then all the differences between the two student volunteers, following a model which the researcher had drawn on the board. Finally, the paragraphs were rewritten so that one student was discussed first and the other second, again following a model drawn on the board. By the end of the class period, the students had written two paragraphs, a point-by-point comparison and a whole-by-whole comparison. All these steps were carried out in a light-hearted manner, accompanied by considerable joking and horseplay. The researcher helped individual students

with their paragraphs, giving advice on sentence structure and spelling.

Several days later, all twenty-six students were given the posttest.

Data Collection

All data used in this study were collected by the researcher. All Stanford tests were scored by hand, as were all the posttests. The researcher also taught the lessons for the experimental groups.

Statistical Treatment

The mean scores from the Stanford pretest were used solely as a basis for the construction of a posttest at the appropriate reading comprehension level. All ranked Stanford comprehension scores are appended (Appendix B). The posttest scores were ranked within each of the four treatment groups. A t test was used to measure the significance of the difference between the mean scores for the treatment and control groups within each class group. A one-tailed t test was used because the researcher expected to find an improvement in reading scores.

RESULTS

Within each class group, the experimental group exhibited a significantly higher posttest comprehension score. The results of the t tests are presented in the

following table:

Table 10

Posttest Mean Scores, Variance, and t Values of Experimental and Control Groups

	E	C	t
Group 1	$\bar{x}$ = 78.3 s^2 = 296.66 N = 6	$\bar{x}$ = 50 s^2 = 640 N = 6	2.26

(c.v. of t_{10} at p = .05 $\geq$ 1.812 for one-tailed test)

	E	C	t
Group 2	$\bar{x}$ = 78.3 s^2 = 256.66 N = 6	$\bar{x}$ = 50 s^2 = 650 N = 5	2.15

(c.v. of t_9 at p = .05 $\geq$ 1.833 for one-tailed test)

The ranked posttest scores are presented in Table 11.

Table 11

Ranked Posttest Scores of Experimental and Control Groups

	E	C
Group 1	100	80
	90	60
	90	60
	70	60
	60	30
	60	10
Group 2	90	80
	90	70
	90	50
	80	30
	70	20
	50	

Interestingly, the mean scores of E_1 and E_2 were identical, as were those of C_1 and C_2, even though the range of scores was different.

DISCUSSION

Although this study included only a small number of students, the significant differences between the scores of the experimental and control groups does suggest that instruction in the writing of at least one rhetorical mode does improve the reading comprehension of that mode. This conclusion has also been borne out by the research of Bonnie Meyer, as she reported in her paper at the thirtieth annual meeting of the Conference on College Composition and Communication (1979). In her research, 300 ninth graders read four passages organized according to four kinds of writing plans: antecedent/consequent, comparison, description, response. Immediately after reading and also one week later, the students wrote summaries of what they remembered. These summaries, called recall protocols, were scored for the amount of correct information they contained and also were checked to see whether their organization matched that of the original reading selection. Those who used the author's method of organization remembered more than those who did not. Then ninth-grade students were taught to identify overall writing plans, and it was found that this instruction

> led to significantly increased identification of the overall writing plans in a text and [their] use in recall protocols. In addition, the amount of information recalled by the instructional group on each of the posttest sessions was nearly double that of both their pre-instruction scores and the scores of the control group for all testing sessions. The study showed that ninth graders can be taught to recognize overall writing plans and that this instruction improves their reading comprehension. (Meyer, p. 7)

Meyer replicated her study with varied age levels, including junior college and graduate students. The instructional phase of her research concentrated on the overall writing plan of comparison because it was with this plan that students demonstrated the greatest recall (Meyer, p. 8).

Thus, it appears that writing instruction in rhetorical modes can be an extremely important tool for improving reading comprehension. However, the broader implications of these studies are much more extensive. Educators have generally assumed that reading should be taught long before writing instruction is introduced. When writing is introduced, such instruction often concentrates upon handwriting or copywork, not cognitive patterns and processes. In some cases, students do not receive true instruction in composition until their first year in college. This study, as well as Meyer's, indicates that the place of formal instruction in composition in the public schools should be given very careful consideration. Those teachers of beginning and remedial readers who have advocated the use of the language experience approach to reading instruction have made a good beginning, but the use of writing in the reading curricula should not end there. Rather, writing activities employing the various rhetorical cognitive patterns should be implemented at all grade levels in order to improve not only writing abilities but also to improve reading comprehension and the developing cognitive strategies of students.

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APPENDIX A: RANKED READING COMPREHENSION SCORES OF STUDENTS IN THE SAMPLE

1. Group One	SDRT scores	Grade level equivalents
	55	9.3
	53	8.6
	52	8.3
	50	7.8
	50	7.8
	50	7.8
	49	7.7
	47	7.3
	44	6.8
	40	6.1
	32	5.1
	28	4.6
	25	4.2
	23	4.0
	19	3.5

$\bar{x}$ = 45, 19th percentile, 3rd stanine, 6.3

N = 15

APPENDIX A: RANKED READING COMPREHENSION SCORES OF STUDENTS IN THE SAMPLE

2. Group Two	SDRT scores	Grade level equivalents
	59	13.0
	58	12.3
	55	9.3
	54	8.9
	53	8.6
	52	8.3
	43	6.6
	43	6.6
	21	3.8*

$\bar{x}$ = 49

N = 9

*Because this student has a severe visual impairment which causes him to read very slowly, this figure is not valid in his case: he answered very few questions in the time allotted for the test, but most of those he answered were correct. Thus, his reading comprehension is much higher than this test score would normally indicate.

APPENDIX B: READING COMPREHENSION POSTTEST OF COMPARATIVE PARAGRAPHS

PARAGRAPH COMPREHENSION

READ the following paragraphs carefully and answer the questions by CIRCLING the letter of the correct answer.

Molly had two brothers, Jeff and John. They both had dark hair like Molly's, and they had dimples, too. Every morning they left the house together because they attended the same high school. Sometimes they got into fights, though, because they both had very quick tempers. On those days, when they were angry, they walked to school on different sides of the street, and such fighting made Molly sad. Although their personalities were similar, Jeff and John were also quite different. Jeff, for example, was two years older than John and quite a bit taller. Since he was tall, Jeff played basketball. John was a better soccer player. Jeff didn't spend much time with Molly anymore because he had a job after school, but John, who was closer to her age, played lots of games with her and helped her with homework.

1. Jeff and John were Molly's
   - A. classmates.
   - B. cousins.
   - C. brothers.
   - D. uncles.

2. Jeff and John were similar because

   A. both had dimples.

   B. both had brown hair.

   C. both had quick tempers.

   D. A, B, and C are all correct.

3. Jeff and John were different because

   A. Jeff was taller.

   B. John was taller.

   C. John had a job.

   D. they went to different schools.

4. Molly was

   A. in high school.

   B. in kindergarten.

   C. in college.

   D. in junior high.

5. Who had a job?

   A. Jeff

   B. Molly

   C. John

   D. Nobody

Terre Haute North Vigo is a high school on the north side of Terre Haute. It is a big, one-story building with a flat roof which leaks when it rains. Inside, the building has many classrooms, a gym, long halls, a cafeteria, and a pool. This school is clean and comfortable inside, except

when the air conditioning is turned too high. Then it is too cold. Because of its good students, some people think of Terre Haute North as the city's academic high school. Terre Haute South Vigo, on the other hand, is often considered the city's sports high school. Recently, its basketball team went all the way to the state finals. South usually has good football teams, too, but this year they lost to North. South's building is exactly like North's, but it is located south of town near a shopping center.

1. Terre Haute North Vigo is located
   A. east of the city.
   B. south of the city.
   C. north of the city.
   D. near a shopping center.

2. An academic high school
   A. is good in studies.
   B. is good in sports.
   C. is good in swimming.
   D. has lots of students.

3. Which is not true?
   A. North and South have identical buildings.
   B. North and South have had good football teams.
   C. North and South have swimming pools.
   D. North and South have had basketball teams in the state finals.

4. North and South are different because

   A. of their buildings.

   B. of their sports.

   C. of their locations.

   D. B and C are correct.

5. North has a problem with

   A. its pool.

   B. its roof.

   C. its students.

   D. its teachers.

APPENDIX B

POSTTEST PART A: "GRANT AND LEE"*

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GRANT AND LEE: A STUDY IN CONTRASTS

"Grant and Lee: A Study in Contrasts" was written as a chapter of The American Story, a collection of essays by noted historians. In this study, as in most of his other writing, Catton does more than recount the facts of history: he shows the significance within them. It is a carefully constructed essay, using contrast and comparison as the entire framework for his explanation.

When Ulysses S. Grant and Robert E. Lee met in the parlor of a modest house at Appomattox Court House, Virginia, on April 9, 1865, to work out the terms for the surrender of Lee's Army of Northern Virginia, a great chapter in American life came to a close, and a great new chapter began.

These men were bringing the Civil War to its virtual finish. To be sure, other armies had yet to surrender, and for a few days the fugitive Confederate government would struggle desperately and vainly, trying to find some way to go on living now that its chief support was gone. But in effect it was all over when Grant and Lee signed the papers. And the little room where they wrote out the terms was the scene of one of the poignant, dramatic contrasts in American history.

They were two strong men, these oddly different generals, and they represented the strengths of two conflicting currents that, through them, had come into final collision.

Back of Robert E. Lee was the notion that the old aristocratic concept might somehow survive and be dominant

in American life.

Lee was tidewater Virginia, and in his background were family, culture, and tradition . . . the age of chivalry transplanted to a New World which was making its own legends and its own myths. He embodied a way of life that had come down through the age of knighthood and the English country squire. America was a land that was beginning all over again, dedicated to nothing much more complicated than the rather hazy belief that all men had equal rights and should have an equal chance in the world. In such a land Lee stood for the feeling that it was somehow of advantage to human society to have a pronounced inequality in the social structure. There should be a leisure class, backed by ownership of land; in turn, society itself should be keyed to the land as the chief source of wealth and influence. It would bring forth (according to this ideal) a class of men with a strong sense of obligation to the community; men who lived not to gain advantage for themselves, but to meet the solemn obligations which had been laid on them by the very fact that they were privileged. From them the country would get its leadership; to them it could look for the higher values--of thought, of conduct, of personal deportment--to give it strength and virtue.

Lee embodied the noblest elements of this aristocratic ideal. Through him, the landed nobility justified itself. For four years, the Southern states had fought a desperate war to uphold the ideals for which Lee

stood. In the end, it almost seemed as if the Confederacy fought for Lee; as if he himself was the Confederacy . . . the best thing that the way of life for which the Confederacy stood could ever have to offer. He had passed into legend before Appomattox. Thousands of tired, underfed, poorly clothed Confederate soldiers, long since past the simple enthusiasm of the early days of the struggle, somehow considered Lee the symbol of everything for which they had been willing to die. But they could not quite put this feeling into words. If the Lost Cause, sanctified by so much heroism and so many deaths, had a living justification, its justification was General Lee.

Grant, the son of a tanner on the Western frontier, was everything Lee was not. He had come up the hard way and embodied nothing in particular except the eternal toughness and sinewy fiber of the men who grew up beyond the mountains. He was one of a body of men who owed reverence and obeisance to no one, who were self-reliant to a fault, who cared hardly anything for the past but who had a sharp eye for the future.

These frontier men were the precise opposites of the tidewater aristocrats. Back of them, in the great surge that had taken people over the Alleghenies and into the opening Western country, there was a deep, implicit dissatisfaction with a past that had settled into grooves. They stood for democracy, not from any reasoned conclusion about the proper ordering of human society, but simply

because they had grown up in the middle of democracy and knew how it worked. Their society might have privileges, but they would be privileges each man had won for himself. Forms and patterns meant nothing. No man was born to anything, except perhaps to a chance to show how far he could rise. Life was competition.

Yet along with this feeling had come a deep sense of belonging to a national community. The Westerner who developed a farm, opened a shop, or set up in business as a trader, could hope to prosper only as his own community prospered--and his community ran from the Atlantic to the Pacific and from Canada down to Mexico. If the land was settled, with towns and highways and accessible markets, he could better himself. He saw his fate in terms of the nation's own destiny. As its horizons expanded, so did his. He had, in other words, an acute dollars-and-cents stake in the continued growth and development of his country.

And that, perhaps, is where the contrast between Grant and Lee becomes most striking. The Virginia aristocrat, inevitably, saw himself in relation to his own region. He lived in a static society which could endure almost anything except change. Instinctively, his first loyalty would go to the locality in which that society existed. He would fight to the limit of endurance to defend it, because in defending it he was defending everything that gave his own life its deepest meaning.

The Westerner, on the other hand, would fight with an equal tenacity for the broader concept of society. He fought so because everything he lived by was tied to growth, expansion, and a constantly widening horizon. What he lived by would survive or fall with the nation itself. He could not possibly stand by unmoved in the face of an attempt to destroy the Union. He would combat it with everything he had, because he could only see it as an effort to cut the ground out from under his feet.

So Grant and Lee were in complete contrast, representing two diametrically opposed elements in American life. Grant was the modern man emerging; beyond him, ready to come on the stage, was the great age of steel and machinery, of crowded cities and a restless, burgeoning vitality. Lee might have ridden down from the old age of chivalry, lance in hand, silken banner fluttering over his head. Each man was the perfect champion of his cause, drawing both his strengths and his weaknesses from the people he led.

Yet it was not all contrast, after all. Different as they were--in background, in personality, in underlying aspiration--these two great soldiers had much in common. Under everything else, they were marvelous fighters. Furthermore, their fighting qualities were really very much alike.

Each man had, to begin with, the great virtue of utter tenacity and fidelity. Grant fought his way down the

Mississippi Valley in spite of acute personal discouragement and profound military handicaps. Lee hung on in the trenches at Petersburg after hope itself had died. In each man there was an indomitable quality . . . the born fighter's refusal to give up as long as he can still remain on his feet and lift his two fists.

Daring and resourcefulness they had, too; the ability to think faster and move faster than the enemy. These were the qualities which gave Lee the dazzling campaigns of Second Manassas and Chancellorsville and won Vicksburg for Grant.

Lastly, and perhaps greatest of all, there was the ability, at the end, to turn quickly from war to peace once the fighting was over. Out of the way these two men behaved at Appomattox came the possibility of a peace of reconciliation. It was a possibility not wholly realized, in the years to come, but which did, in the end, help the two sections to become one nation again . . . after a war whose bitterness might have seemed to make such a reunion wholly impossible. No part of either man's life became him more than the part he played in their brief meeting in the McLean house at Appomattox. Their behavior there put all succeeding generations of Americans in their debt. Two great Americans, Grant and Lee--very different, yet under everything very much alike. Their encounter at Appomattox was one of the great moments of American history.

POSTTEST A: "GRANT AND LEE"

1. Write a sentence which gives the main idea of this essay.

_____

_____

_____

_____

2. Why does Catton assert that Grant and Lee at Appomattox presented one of the most dramatic contrasts in American history?
   a. Lee was rebel and Grant was a loyal U.S. soldier.
   b. Lee was rich and Grant was poor.
   c. Lee came from Virginia and Grant came from the frontier.
   d. Lee represented an aristocracy and Grant represented a democracy.
3. To say that Lee was tidewater Virginia means that he
   a. lived on the Virginia seashore.
   b. was an aristocrat.
   c. was a frontiersman.
   d. was a knight or a squire.
4. Frontier men like Grant were characterized by
   a. an idea that life was competition.
   b. a dislike of democratic principles.
   c. a life of privileges.
   d. a concern for buying slaves.

5. Lee was a symbol of
   a. the wealthy industrialist.
   b. the modern man.
   c. the southern aristocracy.
   d. the perfect soldier.
6. Grant and Lee differs in their attitudes toward social change
   a. Grant looked toward the future and Lee toward the past.
   b. Lee wanted to keep slaves and Grant wanted to free them.
   c. Grant wanted to make the nation bigger and Lee wanted to make it smaller.
   d. Lee represented modern change while Grant represented the static society of the past.
7. Catton says that Grant and Lee were alike because
   a. both were styling and dashing leaders.
   b. both won great victories at Vicksburg.
   c. both were able to turn quickly from war to peace.
   d. all of the above.
8. Why did the behavior of these men at Appomattox put all succeeding generations of Americans in their debt?
   a. They ended the war.
   b. Their quarrel there left social repercussions in the south that still exist today.
   c. Their mutual respect and air of reconciliation set the stage for the reuniting of the union.

d. Grant forced Lee to free the slaves and thus initiated a whole new era of freedom in America.

9. Grant was a symbol of
   a. the age of chivalry.
   b. the modern man.
   c. the wealthy industrialist.
   d. the perfect soldier.

10. The social philosophy of the southern aristocrats held that
   a. it was somehow an advantage to human society to have a pronounced inequality in the social structure.
   b. equality among men is the highest social achievement possible through governmental institutions.
   c. the development of the Confederacy was the will of God.
   d. slavery was essential to production in a basically agrarian culture.

11. Catton proves that Grant and Lee were both daring and resourceful by citing their victories at
   a. Chancellorsville and Vicksburg.
   b. Atlanta and Gettysburg.
   c. Gettysburg and Vicksburg.
   d. Manassas and Petersburg.

12. Lee may be symbolized by
    a. a builder of a new society.
    b. a leader of industry.
    c. a mountain trapper.
    d. a knight in shining armour.
13. Why did it seem as if the Confederacy fought simply for Lee in the end?
    a. All the other southern generals were dead.
    b. Lee was the only leader the soldiers liked.
    c. Lee best embodied the ideals of the Confederacy.
    d. Lee represented a bright future of change and development.
14. Grant may be symbolized by
    a. a knight in shining armour.
    b. a mountain trapper.
    c. a builder of a new society.
    d. a freed slave.
15. The men who grew up beyond the mountains had
    a. a love of country music
    b. an eternal toughness and sinewy fiber.
    c. Indian styled clothes.
    d. a consuming devotion to Independent life.
16. Westerners saw their fate in terms of the nation's destiny because
    a. they could only prosper if their communities prospered.
    b. they needed to improve their farms and shops.

c. they needed to support the development of railroads.

d. they needed federal bank loans to open new businesses.

e. all of the above.

17. The indomitable quality in both Grant and Lee was perhaps evidence by

a. their loyality to Lincoln.

b. their relationship with their sons.

c. their behavior in the Mississippi Valley and Petersburg campaigns.

d. their stellar reputations after their Manassas battles.

18. Why did the bitterness of this war seem to make the reunion of the nation impossible?

a. Both sides were deeply in debt to France.

b. Too many families were divided by war.

c. The social philosophies of the groups were too divergent.

d. The freed slaves had become a burden to society.

19. Why did the old aristocratic notions continue to exist in the American democracy until this war?

a. Lots of aristocrats had come to America.

b. It was a traditional way of life.

c. Americans wanted to develop an aristocracy not tied to land.

d. Lee wanted to be King.

SCORING KEY FOR MULTIPLE CHOICE ITEMS, PART A

2. D
3. B
4. A
5. C
6. A
7. C
8. C
9. B
10. A
11. A
12. D
13. C
14. C
15. B
16. A
17. C
18. C
19. B

SCORING KEY FOR MAIN IDEA STATEMENTS, PART A

The following sentences were received from nine faculty members of the English Department:

1. Although Grant's and Lee's differences represented the opposed currents in the American Civil War, their underlying similarities made a national reconciliation possible.
2. "They were two strong men, these oddly different generals, and they represented the strengths of two conflicting currents that, through them, had come into final collision." (Quoted from the essay)
3. Same as 2 above.
4. While similar in several character traits involving patriotism, and a curious bellicose civility, Grant and Lee differed fundamentally in their attitudes about what America is versus what it ought to become.
5. Although Grant and Lee differed in their backgrounds, their personalities, and their aspirations for themselves and the nation, they were alike in their considerable abilities to wage war and, more importantly, their willingness to pursue peace once the war had ended.
6. Despite important similarities, Lee and Grant were a study in contrasts: Lee, the aristocrat, dedicated to preserving the traditions of the south; Grant, the democrat, fighting for national unity and prosperity.

7. Lee, representative of the backward-looking and static southern ideal of a landed aristocracy, and Grant, symbol of the forward-looking and fluid ideal of the new western independent and self-made leader, were alike in their fighting qualities, their brilliance, and their ultimate love of peace and reconciliation.
8. Although they shared common traits in morality and physical courage, Grant and Lee represented opposed political and social currents in nineteenth century America: the national against the regional vision.
9. Lee, the cultured aristocrat, and Grant, the rough Westerner, while they differed in background, ideas, personality, and aspirations, nevertheless shared the qualities that made them great generals and important public figures: tenacity, fidelity, courage, resourcefulness, and the ability to turn from war to peace.

From the statements thus submitted, the following ten elements were identified for the essay "Grant and Lee":

1. Grant and Lee differed in background.
2. Grant and Lee differed in personality.
3. Grant and Lee represented opposing political currents and philosophies.
4. Grant was a forward looking, modern man.
5. Lee was tied to traditions, backward looking.
6. Grant and Lee were similar in some ways.
7. Both were interested in peace.

8. Both were great military leaders.
9. Grant was a democrat.
10. Lee was an aristocrat.

APPENDIX C

POSTTEST PART B: "GREEN FROG SKIN"*

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THE GREEN FROG SKIN

John (Fire) Lame Deer & Richard Erdoes

The green frog skin--that's what I call a dollar bill. In our attitude toward it lies the biggest difference between Indians and whites. My grandparents grew up in an Indian world without money. Just before the Custer battle the white soldiers had received their pay. Their pockets were full of green paper and they had no place to spend it. What were their last thoughts as an Indian bullet or arrow hit them? I guess they were thinking of all that money going to waste, of not having a chance to enjoy it, of a bunch of dumb savages getting their paws on that hardearned pay. That must have hurt them more than the arrow between their ribs.

The close hand-to-hand fighting, with a thousand horses gally-hooting all over the place, had covered the battle field with an enormous cloud of dust, and in it the green frog skins of the soldiers were whirling around like snow flakes in a blizzard. Now, what did the Indian do with all that money? They gave it to their children to play with, to fold those strange bits of colored paper into all kinds of shapes, making them into toy buffalo and horses. Somebody was enjoying that money after all. The books tell of one soldier who survived. He got away, but he went crazy and some women watched him from a distance as he killed

himself. The writers always say he must have been afraid of being captured and tortured, but that's all wrong.

Can't you see it? There he is, bellied down in a gully, watching what is going on. He sees the kids playing with the money, tearing it up, the women using it to fire up some dried buffalo chips to cook on, the men lighting their pipes with green frog skins, but mostly all those beautiful dollar bills floating away with the dust and wind. It's this sight that drove the poor soldier crazy. He's clutching his head, hollering, "Goddam, Jesus Christ Almighty, look at them dumb, stupid, red sons of bitches wasting all that dough!" He watches till he can't stand it any longer, and then he blows his brains out with his six-shooter. It would make a great scene in a movie, but it would take an Indian mind to get the point.

The green frog skin--that was what the fight was all about. The gold of the Black Hills, the gold in every clump of grass. Each day you can see ranch hands riding over this land. They have a bagful of grain hanging from their saddlehorns, and whenever they see a prairie-dog hole they toss a handful of oats in it, like a kind little old lady feeding the pigeons in one of your city parks. Only the oats for the prairie dogs are poisoned with strychnine. What happens to the prairie dog after he has eaten this grain is not a pleasant thing to watch. The prairie dogs are poisoned because they eat grass. A thousand of them eat up as much grass in a year as a cow. So if the rancher can

kill that many prairie dogs he can run one more head of cattle, make a little more money. When he looks at a prairie dog he sees only a green frog skin getting away from him.

For the white man each blade of grass or spring of water has a price tag on it. And that is the trouble, because look at what happens. The bobcats and coyotes which used to feed on prairie dogs now have to go after a stray lamb or a crippled calf. The rancher calls the pest-control officer to kill these animals. This man shoots some rabbits and puts them out as bait with a piece of wood stuck in them. That stick has an explosive charge which shoots some cyanide into the mouth of the coyote who tugs at it. The officer has been trained to be careful. He puts a printed warning on each stick reading, "Danger, Explosive, Poison!" The trouble is that our dogs can't read, and some of our children can't either.

And the prairie becomes a thing without life--no more prairie dogs, no more badgers, foxes, coyotes. The big birds of prey used to feed on prairie dogs, too. So you hardly see an eagle these days. The bald eagle is your symbol. You see him on your money, but your money is killing him. When a people start killing off their own symbols they are in a bad way.

The Sioux have a name for white men. They call them wasicun--fat-takers. It is a good name, because you have taken the fat of the land. But it does not seem to have

agreed with you. Right now you don't look so healthy--overweight, yes, but not healthy. Americans are bred like stuffed geese--to be consumers, not human beings. The moment they stop buying and consuming, this frog-skin world has no more use for them. They have become frogs themselves. Some cruel child has stuffed a cigar into their mouths and they have to keep puffing and puffing until they explode. Fat-taking is a bad thing, even for the taker. It is especially bad for Indians who are forced to live in this frog-skin world which they did not make and for which they have no use.

You, Richard, are an artist. That's one reason we get along well. Artists are the Indians of the white world. They are called dreamers who live in the clouds, improvident people who can't hold onto their money, people who don't want to face "reality." They say the same thing about Indians. How the hell do these frog-skin people know what reality is? The world in which you paint a picture in your mind, a picture which shows things different from what your eye sees, that is the world from which I get my visions. I tell you this is the real world, not the Green Frog Skin World. That's only a bad dream, a streamlined, smog-filled nightmare.

Because we refuse to step out of our reality into this frog-skin illusion, we are called dumb, lazy, improvident, immature, other-worldly. It makes me happy to be called "other-worldly," and it should make you so. It's

a good thing our reality is different from theirs. I remember one white man looking at my grandfather's vest. It was made of black velvet and had ten-dollar gold coins for buttons. The white man had a fit, saying over and over again, "Only a crazy Indian would think of that, using good money, for buttons, a man who hasn't got a pot to piss in!" But grandpa wasn't a bit crazy and he had learned to know the value of money as well as anybody. But money exists to give a man pleasure. Well, it pleasured Grandpa to put a few golden Indian heads on his vest. That made sense.

I knew a well-educated Indian who had come back to his reservation after working for many years in a big city. With his life savings he opened a cafeteria and a gas station. All day long the cars lined up. "Hey, Uncle, fill her up. I can't pay, but you are rich; you let me have it free." And the same thing over at the cafeteria: "Say, Uncle, let me have one of them barbecued-beef sandwiches. Don't bother to write up a bill for a relation of yours."

The owner had done very well living and working in the white man's way among white people. But now he was an Indian again, back among the Indians. He couldn't say no to a poor relative, and the whole reservation was just one big mass of poor relatives, people who called him Uncle and Cousin regardless of the degree of their relationship. He couldn't refuse them and his education couldn't help him in this situation. We aren't divided up into separate, neat little families--Pa, Ma, kids, and to hell with everybody

else. The whole damn tribe is one big family; that's our kind of reality.

It wasn't long before this Indian businessman was broke and in debt. But this man was smart, white-educated. So he found a way out. He hired a white waitress and a white gas-station attendant and spread the word that he had been forced to sell the business to white owners. From then on he did well. Everybody paid, because they knew white men don't give anything away for free.

I once heard of an Indian who lost a leg in an industrial accident. He got about fifteen thousand dollars in insurance money. In no time his place was overrun with more than a hundred hungry relatives. They came in old jalopies, in buckboards, on horseback or on foot. From morning to night a pickup truck was making round trips between his place and the nearest store, hauling beef and bread and crates of beer to keep all of those lean bellies full. In the end they bought a few scrub steers and did their own butchering. The fun lasted a few weeks, then the money was gone. A day after that the relatives were gone, too. That man had no regrets. He said he wished he'd lose his other leg so that he could start all over again. This man had become quite a hero, even to other tribes, and he was welcome everywhere.

I made up a new proverb: "Indians chase the vision, white men chase the dollar." We are lousy raw material from which to form a capitalist. We could do it easily, but then

we would stop being Indians. We would just be ordinary citizens with a slightly darker skin. That's a high price to pay, my friend, too high. We make lousy farmers, too, because deep down within us lingers a feeling that land, water, air, the earth and what lies beneath its surface cannot be owned as someone's private property. That belongs to everybody, and if man wants to survive, he had better come around to this Indian point of view, the sooner the better, because there isn't much time left to think it over.

POSTTEST B: "GREEN FROG SKIN"

1. Write a sentence which gives the main idea of this essay.

_____

_____

_____

_____

2. According to Lame Deer, a green frog skin is
   a. a joint rolled in special green paper.
   b. paper money.
   c. the epidermis of a frog.
   d. all of the above.
3. Whites wanted the Black Hills area because
   a. there was gold there.
   b. they wanted to feed poisoned oats to prairie dogs.
   c. all land has its price.
   d. they wanted to kill eagles.
4. According to the author, the biggest difference between Indians and whites is
   a. their racial heritages.
   b. their genetic differences.
   c. their population sizes.
   d. their attitudes toward money.
   e. all of the above.
5. The author thinks Custer's fight with the Indians was basically due to
   a. greed. b. hatred. c. altruism.
   d. heroism. e. militarism.

6. In Indian culture, the real world is
   a. on earth.
   b. in Heaven.
   c. in the mind.
   d. non-existent.
7. Lame Deer says that whites are called fat-takers because
   a. they eat gravy.
   b. they take the best from the land without caring for its ecology.
   c. they are always on fat-free diets and exercise programs.
   d. they feed oats that have been poisoned to prairie dogs in order to be able to raise more cattle.
8. Grandfather's buttons were
   a. shells.
   b. beads.
   c. nuggets.
   d. bones.
   e. coins.
9. Indians and whites do not share attitudes toward
   a. debt.
   b. ownership.
   c. fiscal responsibility.
   d. all of the above.
10. An Indian might not sell land because
   a. he believes it belongs to everyone already.
   b. he knows he doesn't own it to begin with.

c. he would want to keep it in order to live by ranching.

d. he has plenty of money already.

11. Grandfather theorized that money is valuable in that it can be used to

a. buy land.

b. support good causes.

c. buy cattle.

d. give man pleasure.

e. buy clothes.

12. Bobcats and coyotes may eat cattle because

a. cattle are their natural prey.

b. they don't like to eat people.

c. there are not enough garbage dumps in the west.

d. their natural prey has disappeared.

13. The differences between Indian and white attitudes toward money are not exemplified by

a. the author's narrative of Custer's last stand.

b. grandfather's vest.

c. the Indian who lost his leg.

d. Lame Deer's friend Richard.

14. Lame Deer's new proverb, "Indians chase the vision; whites chase the dollar," means that

a. all white men are rich and all Indians are poor.

b. Indians like to hunt more than whites do.

c. Whites believe in money and Indians believe in ideas.

d. Indians see profit in money and whites see profit in ideas.

15. The wild life of the prairie has disappeared because
    a. there are too many hunters.
    b. there are no more Indians.
    c. Custer's men were all killed.
    d. whites are greedy for money.
    e. atomic tests in Utah killed it.

16. Artists are the Indians of the white world because
    a. they are visionaries.
    b. they like paints.
    c. they do not like money.
    d. their pragmatic outlook makes them philosophically a kin to Indians.

17. People who start killing off their own symbols are in a bad way because
    a. everybody needs a flag.
    b. almost all Americans love eagles.
    c. they are doomed to share the Indians' fate.
    d. they display little foresight and self-respect.
    e. none of the above.

18. Indians are called dumb, lazy, improvident, immature and other-worldly because
    a. they drink too much and cannot tolerate alcohol.
    b. they refuse to work diligently at most jobs they should appreciate having.
    c. they want too many handouts and too much welfare.

d. they have a great deal of trouble learning to read and write.

e. their ideas of what is important do not coincide with those of the larger population.

19. Which statement is not the reason the author says that "if a man wants to survive, he had better come around to this Indian point of view?"

a. The return to more natural values will increase the length of human life.

b. Indians wish to become more prosperous.

c. Ecological mismanagement will seriously damage or destroy human life.

d. Greediness is a primary world evil.

e. Money can't buy happiness.

SCORING KEY FOR MULTIPLE CHOICE ITEMS, PART B

2. B
3. A
4. D
5. A
6. C
7. B
8. E
9. D
10. A
11. D
12. D
13. D
14. C
15. D
16. A
17. D
18. E
19. B

SCORING KEY FOR MAIN IDEA STATEMENTS, PART B

The following sentences were received from nine faculty members of the English Department:

1. The opposed attitudes of Indians and White men toward money represent an irreconcilable cultural split, because the white man's attitude is ultimately life-destroying, whereas the Indian's is life-affirming.
2. "Indians chase the vision; white men chase the dollar." (Quoted from the essay)
3. White men and Indians have very different views of money/possessions.
4. Richard, even though the white man would be surprised and amused at my even knowing a Latin tag, the point of my little speech on the Wasicun's love of green frogs is radix malorum cupiditas est, an ethic, a vision, foreign to us Indians.
5. If man wishes to survive, he needs to pursue a vision of life that respects all of the natural world (including other men) rather than one that exploits and destroys the natural world for the sake of mere dollars.
6. Unlike the Indian, who derives pleasure from using and sharing his wealth, the white man is acquisitive to the point that he is destroying himself and his environment.
7. Materialistic attitudes cause white Americans shortsightedly to despoil the environment, unlike Indians, whose primary values are love of the land and cooperation with other people.

8. A primal people looks on physical nature as the patrimony of all mankind, wealth per se; a twentieth century American capitalist defines it as something that generates wealth, the source of a medium of exchange.
9. A dollar bill, "a green frog skin," symbolizes the differences between individualistic, money-hungry whites and generous, improvident Indians.

From the statements thus submitted, the following ten elements were identified for the essay "Green Frog Skin":

1. Indian and white attitudes toward life are different.
2. White men value money.
3. Indians do not care about money.
4. Indians chase a vision.
5. White men are greedy and chase dollars.
6. White greed exploits and ruins nature, an activity which is dangerous to mankind's survival.
7. Indians respect the natural world.
8. Indians like to share among themselves.
9. White men buy and sell land.
10. Indians feel that the land belongs to all living things.

APPENDIX D

INSTRUCTIONAL LESSON PLANS FOR EXPERIMENTAL AND CONTROL GROUPS AND INSTRUCTIONS TO PARTICIPATING FACULTY

INSTRUCTIONAL LESSON PLAN FOR

EXPERIMENTAL GROUPS

I. Objectives

A. The students will be able to write a point-by-point comparison.

B. The students will be able to write a whole-by-whole comparison.

II. Instructional steps

A. Ask for two student volunteers, preferably a girl and a boy.

B. Ask these volunteers to come to the front of the class where everyone can see them.

C. Discuss a comparison as a process of showing similarities; give examples; ask the class to think of examples.

D. Discuss a contrast as a process of showing differences; give examples; ask the class to think of examples.

E. Ask the class to compare and contrast the two student volunteers orally.

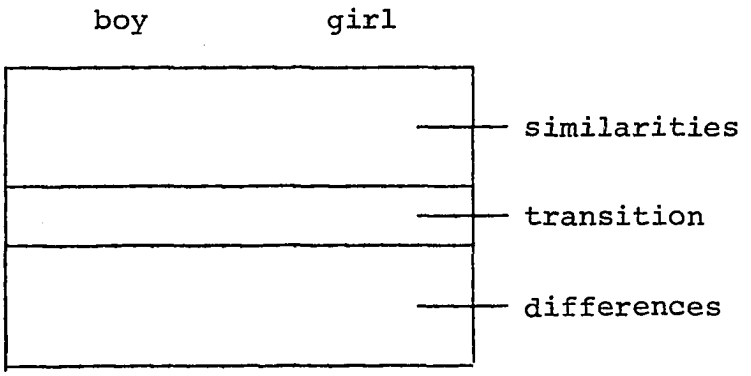
1. Write names of each volunteer on the board.

2. List characteristics of each beneath his name.

3. Pick out similarities and differences.

F. Ask the students to write a paragraph in which they first discuss all the similarities and then all the differences between the two volunteers.

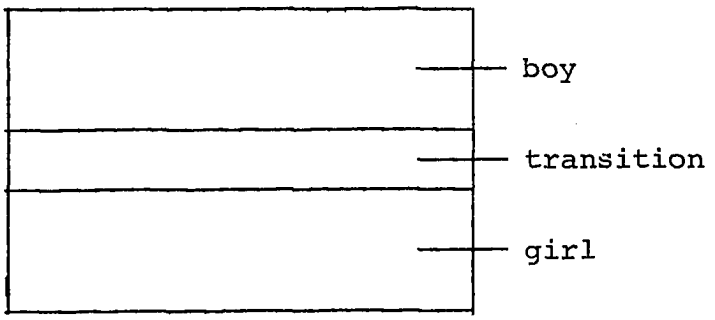
G. Draw the following paragraph diagram on the board.



H. Discuss the diagram; point out how the sentences within each section switch back and forth between the two subjects.

I. Give the students time to write the paragraph; help them with spelling, transition words, etc.; it may be necessary to provide a topic sentence for this paragraph.

J. Now ask the class to rewrite the paragraph in another way. Draw the next diagram on the board and discuss how it differs from the first one.



K. Once again, give them time to rewrite their paragraphs, giving help as needed.

III. Conclusion

A. Ask the students to evaluate their paragraphs.

1. Which is most clear?

2. Which is easiest to write?

3. Which is most pleasant to read?

B. Follow-up

1. What are some other things we could compare?

2. Why is comparison useful?

INSTRUCTIONAL LESSON PLAN

FOR CONTROL GROUPS

I. Objectives

A. The students will be able to make oral comparisons.

B. The students will be able to identify the comparisons made in an essay.

II. Instructional steps

A. Ask for two student volunteers, preferably a girl and a boy.

B. Ask these volunteers to come to the front of the class where everyone can see them.

C. Discuss a comparison as a process of showing similarities; give examples; ask the class to think of examples.

D. Discuss a contrast as a process of showing differences; give examples; ask the class to think of examples.

E. Ask the class to compare and contrast the two student volunteers orally.

1. Write names of each volunteer on the board.

2. List characteristics of each beneath his name.

3. Pick out similarities and differences.

F. Distribute the essay "The Priestly People," and ask the class to read it quickly.

G. Ask the students to identify the comparison made in this essay.

1. What things are compared? (Ideas of divine conquerors)
2. What things are contrasted? (Israel's sense of mission with that of other national groups)
3. How does Israel see its mission differently from that of other nations? (Idea of service vs conquest)
4. How does the author define service to God? (Disinterested love)
5. Point out that the comparison is point by point while the contrast is whole by whole. (Nations compared with one another; Israel contrasted with all)
6. What one sentence represents the main idea of this essay? Discuss students' answers, asking them to support their choices. (Possibilities: Here long ago a novel concept was revealing itself, that of a nation whose greatness would lie in ministry, in the performance of priestly duties for the benefit of mankind. Israel was distinguished from other nations as a people chosen to serve.)

III. Conclusion

A. What are some other things we could compare?

B. Why is comparison useful?

INSTRUCTIONS TO PARTICIPATING FACULTY

1. Please explain very briefly that these lessons constitute a doctoral research program in which test scores will be used anonymously in groups.
2. In one class of tenth-graders, teach the control lesson, and in the other class, teach the experimental lesson. The object of the study is to see whether those who receive writing instruction will have better reading comprehension test scores.
3. In the next class meeting, administer the posttest to both classes. Within each class, half of the students should have the posttest beginning with "Green Frog Skin," and half should have the one beginning with "Grant and Lee." This needs to be done so that test sequence will not affect test results.
4. The posttest requires students to read two essays, write a thesis sentence for each, and answer a number of multiple choice items which accompany each. Please stress the importance of finishing the test if at all possible.
5. Be sure that students put their names on the posttests before collecting them, as I must match these results with the STEP reading scores on their student records.
6. The tests for each class should be kept together and identified by class time and teacher name. When the tests have been given, I will pick them up and score

them. I may be reached by phone at ISU, 232-6311, extension 2592 or 2874, or at home, 877-9627.

Thank you very much for your interest and participation.

Cathy Baker

APPENDIX E

ITEM-TOTAL CORRELATIONS FOR MULTIPLE CHOICE ITEMS

Table 12

Initial Item-Total Correlations for Multiple Choice Items on Part A and Part B

Item	Corrected Item-Total Correlation
A2	.51
A3*	.11
A4*	.14
A5	.26
A6	.40
A7	.26
A8	.41
A9	.26
A10	.39
A11	.34
A12*	.13
A13	.53
A14*	-.03
A15	.32
A16	.38
A17	.21
A18*	.09
A19	.36
A20	.44

(table continues)

Item	Corrected Item-Total Correlation
B2	.47
B3	.25
B4	.45
B5	.57
B6	.38
B7	.49
B8	.35
B9	.25
B10*	-.06
B11	.33
B12	.53
B13	.55
B14	.34
B15	.60
B16	.36
B17	.47
B18	.23
B19	.32
B20*	.04
B21	.21

*Items omitted or improved

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