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ABSTRACT

This study investigated the effects of graphic advance organizers and schematic cognitive-mapping organizers upon the comprehension of 146 ninth grade students of below-average reading ability. Students were randomly assigned to one of three conditions: graphic advance organizer, schematic cognitive-map organizer, and control. A 15-item, informal multiple-choice test of comprehension was given to each group after it had studied the appropriate organizer and read a 300-word selection. Results indicated that readers using graphic advance organizers had higher comprehension scores than did readers using schematic cognitive-mapping organizers or readers using no organizer and that there was no significant difference in comprehension scores of males and females. The results were interpreted as providing support for the use of nonprose advance organizers as another possible instrument for improving the comprehension of the below-average reader. (Author/AA)

THE EFFECTS OF GRAPHIC ADVANCE ORGANIZERS AND SCHEMATIC COGNITIVE MAPPING ORGANIZERS UPON THE COMPREHENSION OF NINTH GRADE STUDENTS

A THESIS

SUBMITTED TO THE FACULTY

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TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	ii
LIST OF TABLES	v
Chapter	
I. BACKGROUND OF THE PROBLEM	1
Statement of the Problem	3
Hypotheses	3
Importance of the Study	4
Definition of Terms	5
Limitations of the Study	6
II. REVIEW OF THE LITERATURE	8
Ausubel's Advance Organizer Concept	8
Other Studies about Organizers	11
Rosenblatt's Schematic Cognitive Mapping	15
Summary	16
III. PROCEDURE	17
Population of Subjects	17
Construction of Instrument	18
Selection of Tests	20
Statistical Design	21
Experimental Design	22
Summary	23

TABLE OF CONTENTS (continued)

Chapter		Page
IV.	RESULTS.	24
V.	SUMMARY AND CONCLUSIONS.	33
	Summary and Discussion of Findings for Total Group.	35
	Graphic Advance Organizer.	35
	Schematic Advance Organizer.	36
	Males vs Females	37
	Graphic vs Schematic Organizer . . .	37
	Conclusions and Implications	38
	Suggestions for Further Study. . . .	39
REFERENCES		41
APPENDIXES		
A.	Graphic Organizer: Loch Ness	45
B.	Schematic Organizer: Loch Ness	47
C.	Reading Selection	49
D.	Test of Comprehension: Loch Ness . . .	52
E.	Skills Tested by Specific Questions . .	57
F.	Graphic Organizer: Tasadays.	59
G.	Schematic Organizer: Tasadays.	61
H.	Reading Selection: Tasadays.	63
I.	Test of Comprehension: Tasadays. . . .	66
J.	Skills Tested by Specific Questions . .	71

TABLE OF CONTENTS (continued)

Chapter		Page
APPENDIXES		
K.	List of Raw Scores: Loch Ness. .	73
L.	List of Raw Scores: Tasadays . .	76

LIST OF TABLES

Table		Page
1.	Summary of Mean Raw Scores on Reading Comprehension Test of 15 Questions, Comparing Readers with Graphic organizers to Readers with No Organizer . . .	27
2.	Summary of Mean Raw Scores on Reading Comprehension Test of Questions Comparing Readers with Schematic Organizers to Readers with No Organizers	28
3.	Summary of Mean Raw Scores on Reading Comprehension Test of 15 Questions, Comparing Males and Females	30
4.	Summary of Mean Raw Scores on Reading Comprehension Test of 15 Questions, Comparing Readers with Graphic Organizers to Readers with Schematic Organizers	32

CHAPTER I

BACKGROUND OF THE PROBLEM

The struggle to increase reading comprehension has forced today's classroom teacher to seize upon any method available to him. This may extend from the more familiar DRA (Directed Reading Activity) to the less familiar SQ3R (Survey, Question, Read, Recite, Review).

In many classrooms, especially at the secondary level, reading comprehension is often equated to academic success. Consequently, the continuing search for techniques to improve comprehension cannot be over emphasized.

An active area of research recently has been the investigation of the role of passage organization on the amount and type of information recalled from prose passages. The original impetus for such research was probably rooted in the work of David Ausubel (1963). He theorized that if the learner was aware of a selection's structure (how ideas were related) and given a general concept under which unfamiliar concepts could be subsumed, comprehension would be aided. The advance organizer is the operational construct of this theory.

The typical advance organizer was a written prose

passage which dealt with the content of the learning passage at a higher level of generality and inclusiveness. The length of the organizer varied.

Several studies on advance organizers indicate how prose organizers can be beneficial to the above average reader. By contrast, the prose organizer has borne little fruit for the below average reader.

A unique schematic cognitive mapping organizer was created by Rosenblatt (1975). He used this instrument while working with seventh grade social studies classes in Westfield, N.J.

In his appeals for further research, Rosenblatt informs us that

> the cognitive maps and the entire area of schematic and the value of each in the classroom is an area virtually void of both practical and theoretical research (Rosenblatt, 1975, p. 57).

This investigation is in response to his appeal.

The growing number of below average readers has warranted a closer look at theories similar to Ausubel's. His theories of subsuming suggested that learning will be more efficient when input is matched to the learner's cognitive structure. The advanced organizer is his method of implementing his theories. This study is primarily interested in the below average reader. Consequently, emphasis is placed on non-prose types of advance organizers.

Barron (1972) developed "graphic organizers whose biggest advantages include an operational definition and a set of directions. This could be another aid to the slower reader.

This study is a partial response to those who have called for more research to determine how advance organizers may facilitate learning when students lack processing skills and the ability to organize information; for such students typify the below average reader.

Statement of the Problem

The purpose of this study was to compare the effects of two types of advance organizers upon the below average readers' comprehension of material in ninth grade English classes.

The question to be answered in this study was to what extent would comprehension of ninth grade English material be enhanced by instruction using two types of "non-prose", visual, advance organizers.

Hypotheses

In order to answer the question in this study, the following hypotheses were proposed: (All differences with below average readers using comprehension test scores)

1. There will be no difference in scores between readers using graphic advance organizers and readers using no organizer.

2. There will be no difference in scores between readers using schematic advance organizers and readers using no organizer.
3. There will be no difference between males and females using non-prose organizers (both graphic and schematic).
4. There will be no difference between the scores between readers using graphic advance organizers and those using schematic advance organizers.

Importance of the Study

Society's frustration over the growing number of poor readers passing through the nation's classrooms, has led to greater expenditures of time and money at both state and federal levels of government. Recently developed Right-to-Read plans have borne evidence to this fact. Raising the reading level of the student through suggestion, support, and the improved expertise of the regular classroom teacher has been designated as a major purpose of such plans.

New Jersey's Right-to-Read plan stated as a prime goal, the development and refinement of a diagnostic-prescriptive process of reading instruction with subsequent individualization within a classroom setting.

In light of the current situation, almost any tool or technique resulting in better comprehension of written material could become quite popular. For the teacher it

could mean less time on reading and more time on in depth instruction. For the parent and/or taxpayer fewer man-hours of instructing the same material ultimately means less money needed for the education budget.

The student would probably benefit most. Any useful aid to his comprehension will enable him to learn faster. The content of an organizer is chosen for its suitability in explaining, integrating, and interrelating the material it precedes. Consequently, in an ideal situation, individual differences in cognitive structure require that advan organizers be written for every learner or group of learne for each set of materials used in the curriculum. For the below average reader, the need for such an aid to comprehension becomes intensified.

Studies have shown low ability subjects (below averag readers) to be more reliant on the organizing features of an instructional program. For these students an effective visual organizer could greatly increase their comprehensio

Definition of Terms

For the purpose of this study, the following terms will be defined:

Below average readers. Students selected for this study with a total reading score of 6.0 down to 4.0 on the Metropolitan Achievement Test Advanced level-Form G.

Cognitive structure. The reader's existing backgroun

of knowledge.

Written advance organizer. A short prose passage written at a high level of generality. Presented to the student first, it shows the same relationship of ideas and concepts found in the longer learning passage. It's purpose is to highlight concepts and their relationship to each other.

Graphic advance organizer. One in which information is presented by introducing each major concept in the form of a simple picture. Words are kept to a bare minimum. It is presented prior to the actual reading selection.

Schematic cognitive mapping organizer. A diagrammatic representation of the relevant concepts found within the reading selection and their relationships. It is presented prior to the actual reading selection Rosenblatt (1975).

Comprehension. The raw score achieved on an informal, objective test devised by the investigator and administered after reading a specific reading selection.

Limitations of the Study

This investigation was conducted within the framework of the following limitations:

1. The structure and construction of the schematic cognitive map organizer was unique to the work of Rosenblatt (1975). To the knowledge of this investigator, this application represents the first attempt to partially replicate its use.

2. A review of the literature has failed to reveal any occasion when either written or visual organizers have been used exclusively for purposes of the below average reader.

3. Most studies with organizers have involved older subjects. This could affect the outcome of the study. The group was taken from a cross-section of poor and middle income Black homes. This factor further limits the findings and the degree to which they may be generalized.

4. The design of this study made use of only two reading selections. Care should be used in making generalizations based upon two selections as it is unwise to generalize based upon a limited population (Coleman, 1972).

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this chapter is to examine the findings of previous studies relating to advance organizers, both written and visual. The review deals with three major areas: (a) Ausubel's advance organizer concept (b) other studies involving the use of advance organizers (c) Rosenblatt's study on the use of the schematic cognitive mapping organizer.

Ausubel's Advance Organizer Concept

David Ausubel, a distinguished psychologist, may be identified as "the father of the advance organizer". Thus his work deserves consideration in the present study. His book, The Psychology of Meaningful Verbal Learning, is concerned with the psychology of how students comprehend, learn, organize, and remember the large volume of meaningful, written materials presented to them by the school (1963).

During the early sixties, Ausubel projected several parts of his theory. First, that the most effective way of increasing learning and retention of meaningful verbal material is to "manipulate" the reader's existing background of knowledge or cognitive structure, since it is a principle factor in acquiring new meanings. Secondly, cognitive

structure is hierarchically organized in terms of highly inclusive conceptual traces under which are subsumed less inclusive ideas; thirdly, that new meanings are acquired through a process of assimilation in which unfamiliar information is incorporated into the broader knowledge system (subsumption).

The advance organizer is Ausubel's operational construct for his theory (Weisberg, 1970). It is composed of "introductory" material at a higher level of abstraction, generality, and inclusiveness than the learning task itself. This "higher" level is Ausubel's point of distinction between his advanced organizer and an ordinary summary or overview. These, he notes, are presented at the same level as the material to be learned.

Presented to the reader first, the function of the organizer is to "provide ideational scaffolding for the stable incorporation and retention of the more detailed and differentiated material that follows in the learning passage". (Ausubel, 1963, p. 29).

The basic principle underlying advance organizers is that the new material will be incorporated into existing cognitive structures. Subsuming concepts will make comprehension of the new material more readily attainable (Ausubel, 1960).

The original study involved 128 college students who

used a 2,500-word passage on the properties of steel. One group received an overview passage typical of textbooks. The experimental group received a passage containing concepts on the general nature of making alloys. Each group studied its passage, then read the learning selection. Later, both groups were given a multiple choice test based on the selection. The difference between the mean score of the groups was significant. It was obvious to Ausubel that the organizer provided "anchoring foci" to facilitate comprehension (Ausubel, 1960).

Exactly how did the advance organizer aid comprehension? There were at least two ways: First, they provided a conceptual framework to which the more specific information in the learning passage can be related. Second, they assisted the learner in discriminating between the new material and similar or conflicting ideas in his existing cognitive structure (Barron and Cooper, 1973).

Two kinds of written advanced organizers were identified in the original work: an "expository" organizer is used with unfamiliar material, while a "comparative" organizer is used for relatively familiar material.

There were no examples of organizers included in Ausubel's original book. In addition, he gave few specifics on how they should be written. Two directives that were stressed need to be remembered, that advance organizers

don't work with abstract materials, because they have built in organizers (Ausubel, 1963). Furthermore, that when constructing advance organizers

> to be maximally effective they must be formulated in terms of language, concepts and propositions already familiar to the learner, and must use appropriate illustrations and analogies (Ausubel, 1963, p. 29).

Other Studies Involving the Use of Organizers

The most frequently used group for studies with organizers has been the college student. However, since the present study dealt with secondary subjects, wherever feasible, this review has been confined to studies involving secondary and/or elementary students.

The nebulosity of Ausubel's guidelines for making organizers has led to many divergent approaches toward their construction. In spite of their lack of uniformity in construction, the work of several researchers lend support to Ausubel's theories of the advance organizer.

Weisberg (1970) of Jersey City State College gave favorable results for the use of a "visual" organizer. Working with eighth grade science students, he wanted to determine if a conceptual framework could be developed by two types of visual organizers. He used a map and a graph against the verbal form. Weisberg's subjects did not function significantly better after a verbal organizer. However, they did function better after using the graph, and did even better after a map-type organizer.

Despite the lack of impressive statistical significance, some researchers have discovered certain subjective advantages to the use of the advance organizer as a learning aid. Lucas and Fowler (1975) used three types of organizers (visual, audio, and written) to determine whether they enhanced the comprehension of a biological concept for seventh graders. Subjective data obtained in interviews indicated that advance organizers "presumably' facilitated the learning of the biological concepts. Subjects reported that the organizers helped them in interpreting the instructional passage and gave them insight into answering the test questions. This was confirmed by asking several questions after instruction and testing ended. However, statistical analysis of the objective data ruled against significant affects of the organizers for learning the biological concept.

Novak, Ring, and Tamir (1971) attempted to review 156 studies that dealt with important parameters of Ausubel's learning theory. They decided in advance that Ausubel's work was indeed a "promising base for future research formulation". Then, they sought to illustrate this contention through an interpretation of research findings in terms of Ausubel's theory and implications for science education.

In terms of the below average reader, this researcher

found much food for thought in the studies reviewed under individualized instruction and Ausubel's subsumption theory. The position is taken that instruction will increase learning when it matches input with the cognitive structure of the learner. The present investigation attempts to validate just this point, because in part it is based on the premise that a visual advance organizer can facilitate learning in areas where prior cognitive structure of the student may not contain available subsumers. Kuhn and Novak (1970) attempted to combine the use of an advance organizer and the careful sequencing of subsequent material to be learned. They worked with Purdue University Education majors in an elementary biology course over an extended period of time. The difference in the mean scores for both the three-week and the six-week retention test scores were in favor of the advance organizer.

Working with junior and senior high students, grades six through twelve, Barron (1972) was ultimately involved in three investigations on the effects of graphic organizers. His work is highly relevant to the present investigation. His was one of the original definitions of the graphic organizer, appearing in 1969. Operationally defined,

> the graphic organizer is a visual and verbal presentation of the key vocabulary in a new learning task in relation to subsuming and/or parallel terms that presumably have previously been incorporated into the learner's cognitive structure. (Estes, Mills, and Barron, 1969, p. 41)

Almost immediately, several advantages of the graphic over the prose organizer became apparent. It had been briefly defined; directions existed for its construction; and an interaction between teacher and student was called for in its use; allowing the teacher to evaluate its appropriateness in relation to the learner's existing background of knowledge, or cognitive structure. Briefly stated directions were to introduce key vocabulary in diagrammatic form. More specific directions were as follows:

1. Analyze the vocabulary of the learning task and list all the words that you feel are important for the student to understand.

2. Arrange the list of words until you have a scheme which depicts the relationships among the concepts particular to the learning task.

3. Add to the scheme vocabulary terms which you believe are understood by the students in order to depict relationships between the learning task and the discipline as a whole.

4. Evaluate the organizer. Have you clearly depicted major relationships? Can the overview be simplified and still effectively communicate the idea you consider crucial?

5. Introduce students to the learning task by displaying the scheme and informing them why you arranged the terms as you did. Encourage them to contribute as much information as possible.

6. During the course of the learning task, relate new information to the organizer as it seems appropriate. (Estes, Mills, and Barron, 1969, p. 41)

The content and readability of Barron's study was aimed at the middle level, or ninth grade. He used only those

subjects for whom the learning passage represented an instructional reading level. The results of Barron's study did not support the organizer as a "significant" aid to comprehension.

At the elementary level, Koran and Koran (1973) used three different prose organizers with fourth grade science subjects. They found that one type was just as effective as the other.

Clawson and Barnes (1972) did an investigation with third and sixth graders. They created original texts, and tests, using pre and post organizers. Their results did not give further support to the use of organizers.

Jerrold's (1971) investigation of the advance organizer used with ninth graders showed that the organizer did aid the comprehension of above average readers, but did nothing for the average reader.

Rosenblatt's Schematic Cognitive Mapping

A "marriage" between Ausubel's advance organizer and Tolman's (1948) cognitive mapping theory has been aptly used to describe Rosenblatt's schematic creation (Rosenblatt (1975).

Tolman felt that as learning proceeded, certain cognitive structures were built. These structures, or maps, took in and categorized experiences. Furthermore, if new learning material could be incorporated into existing

cognitive structures and subsumed under these structures, learning would be made easier. Studies have been done on Tolman's theories; but attempts to apply the cognitive map to the classroom have been rare.

Another study that influenced Rosenblatt was the work of Furst (1948) on memory. Furst believed that memory could be aided through the use of detailed schemata that was designed to receive new learning material.

Summary

Inconsistent results from studies on advance organizers suggest that the specific conditions under which organizers are beneficial have yet to be determined. Numerous researchers have done studies replicating Ausubel's work and adapting his idea to different types of advance organizers.

The schematic cognitive map and/or graphic organizer may prove to be instruments that illustrate the elements of a particular aspect of new learning and be a cognitive example of how it is or could be structured. These visual representations should aid comprehension (Rosenblatt, 1975).

Concluding that written organizers helped only the above-average reader, Rosenblatt suggested the investigation of schematics and graphics for use with below-average readers.

CHAPTER III

PROCEDURE

The purpose of this chapter is to describe in some detail the population used in this study, the materials and test, background of their selection, the procedure for administration of the study, and the statistical design used.

Population of Subjects

The subjects used in this study were 146 ninth grade students from Plainfield High School in Plainfield, N.J. This group was selected from the total ninth-grade population of over 800 students.

Plainfield was designated as an All-American City for 1976.. A total personal income estimated at $203,027,000 ranked Plainfield 320 among 419 leading cities in the nation. It is considered a part of the metropolitan New York City area, but serves as the core for several surrounding communities of Watchung, Westfield, Summit, Dunellen, etc.

The average household income was estimated at $12,911. This compares with $11,800.73 nationally and $15,136 for the state.

In the realm of public education, a review of the 395 graduates in the class of 1971, showed 51% in degree granting institutions; 10% in non-degree schools beyond high school; 24.6% employed and 2% in government service or the armed forces.

Plainfield High School is an urban-type school, with a population of approximately 2,700 students. The majority of these students come from a cross-section of poor and middle income Black homes, many of which are college oriented.

The 146 students taking part in the study were randomly selected from the ninth graders identified as below average readers. Students with a total reading score of 6.0 down to 4.0 on the Metropolitan Achievement Test Advanced Level-Form G constituted the pool of below average readers. Table I summarizes the reading scores for all groups selected.

Students were randomly assigned to three treatment groups. Group A was given a graphic (pictorial) advance organizer before reading the learning passage. Group B was given a schematic cognitive map before reading the learning passage. Group C was the control group and did not receive an advance organizer.

Construction of the Instrument

The material used in this study consisted of two

reading selections of approximately 300 words selected from Mini-Units in Reading, Book I by Bernard Fox and Audrey Weiner.

The first selection dealt with theories about the origin of the Loch Ness monster and related scientific searches for it. When tested for readability on the Fry Readability Graph the selection fell within the low sixth grade range. The second selection dealt with the Tasadays, a tribe on the verge of extinction. Here also, the readability fell within a low sixth grade range.

Graphic Organizers were crea[illegible] for each selection. The following directions were used [illegible]s a general guide:

1. Analyze the vocabulary of the learning task and list all the words that you feel are important for the student to understand.

2. Arrange the list of words until you have a scheme which depicts the relationships among the concepts particular to the learning tasks.

3. Add to the scheme vocabulary terms which you believe are understood by the students in order to depict relationships between the learning task and the discipline as a whole.

4. Evaluate the organizer. Have you clearly depicted major relationships? Can the overview be simplified and still effectively communicate the idea you consider crucial?

This is the directive which influenced this investigator to use a "pictorial graphic organizer".

5. Introduce students to the learning task by displaying the scheme and informing them why you arranged the terms as you did. Encourage them to contribute as much information as possible.

6. During the course of the learning task, relate new information to the organizer as it seems appropriate. (Estes, Mills, and Barron, 1969, p. 41)

A schematic cognitive mapping organizer was created for each selection. Rosenblatt's example was followed, closely for the first cognitive map (Schematic A). It contained main ideas inside a figure with lines both horizontal and/or vertical connecting and categorizing related concepts. For the second cognitive map (Schematic B), this investigator developed an original scheme of contiguous lines to depict related concepts. Specific samples of each organizer can be found in the Appendixes of this study.

The concepts in both types of organizers were the same as the relationships stressed. Each organizer and the selection were submitted to a group of English teachers for examination and evaluation. Based on their recommendations modifications were made.

Selection of Tests

To assess comprehension in this study, a 15-item multiple choice test based upon the reading was devised by the investigator.

The questions used on the test were taken from two sources. One group of five questions was adapted directly from Mini-Units in Reading, Book I (Fox and Weiner, 1974). The second group of 10 questions was formulated by the in-

vestigator. These questions were designed to assess understanding of details, ability to use contextual clues, a breakdown of skills tested by each question.

The reliability of the instrument was measured based upon the results of a pilot study.

The results of the pilot study indicated the following: A small group of remedial readers in the tenth grade was used. They were so designated for scoring in the twentieth percentile on the New Jersey State Assessment Test. Two tenth grade teachers previewed the original set of 18 questions. Three questions were disregarded at their suggestion.

Statistical Design

For purposes of this study, results were to show how each organizer affected comprehension of the below average reader.

The research design used was the post test only design. The statistical procedure used was a t test to analyze any differences between groups.

In order to answer the hypotheses, the mean scores for readers with the graphic advanced organizer were compared to the mean scores of readers in the control group. Secondly, the mean scores for readers with the schematic advanced organizer were compared to the mean scores of readers in the control group. Mean scores for boys who used both graphic and schematic advanced organizers were compared to those for girls. Finally, the mean scores of readers

who used graphic advanced organizers were compared to the mean scores of readers who used schematic advanced organizers.

Experimental Design

N=146

H_o 1	Graphic	vs	Control
H_o 2	Schematic	vs	Control
H_o 3	Boys Graphic Schematic	vs	Girls Graphic Schematic
H_o 4	Graphic	vs	Schematic

Procedures for this study were conducted within each of twenty-eight individual ninth grade English classes. All activity occurred on the same day.

Following an ABAB design of selection, were exposed to two different reading passages. These were used in conjunction with the two different types of advance organizers. Thus if a reader used a graphic organizer with his first reading passage he was switched to the schematic organizer for use with his second reading passage.

Each reader was issued his individual copy of an organizer and allowed three minutes of silent study. Then he was passed a three hundred word reading passage, for which he was allowed up to eight minutes reading time. The time schedules

were determined after consultation with four of the eight English teachers.

Summary

One hundred forty-six ninth grade students were randomly selected from English classes of Plainfield High School in Plainfield, New Jersey to take part in this study. They were divided into three treatment groups: the first was instructed to use graphic advance organizers; the second was instructed to use schematic cognitive mapping organizers; and the third was a control group which received no organizer at all. Groups studied the appropriate organizer, read and studied a reading passage of 300 words, then took a 15-item multiple choice test of comprehension.

A t test was used to examine the data.

CHAPTER IV

RESULTS

The purpose of this chapter is to examine the data collected as a result of this study. The specific statistical procedure used for examination was a t test.

The study was designed to examine the effect of non-prose advance organizers on the comprehension of ninth graders' English material. Two different reading selections were used in conjunction with two types of organizers: a graphic (pictorial) organizer and a schematic (cognitive mapping) organizer. The specific hypotheses tested were:

1. There will be no difference in scores between readers using graphic advance organizers and readers using no organizers.
2. There will be no difference in the scores between readers using schematic advance organizers and readers using no organizers.
3. There will be no difference between males and females using non-prose organizers (both graphic and schematic).
4. There will be no difference between the scores between readers using graphic advance organizers

and those using schematic advance organizers.

One hundred forty-six ninth grade students at Plainfield High School in Plainfield, New Jersey took part in this investigation. Students were selected from twenty-eight heterogenously grouped English classes. All data was collected in a one day session held in each individual class, and only concerned below-average readers.

To test the hypothesis, students were randomly assigned to one of three experimental groups. One group was given a schematic (cognitive mapping) organizer; the second group was given the graphic (pictorial) organizer, and the third group was not given an organizer. Each organizer was studied for three minutes before students read the corresponding 300-word selection. Then a 15 item multiple choice test of comprehension was administered. This procedure was followed with each of two different reading selections. The tests were scored and the data examined. Significant differences were found among the groups.

Hypothesis # 1

In the first hypothesis, readers exposed to the graphic organizer were compared to readers with no advance organizer. The control group had a mean score of 11.5 with a standard deviation of 8.6. The treatment (graphic) group performed better, achieving a mean score of 12.4 with a standard deviation of 9.6. This information suggested a

significant difference between the mean scores of the treatment and control groups. Summaries of the results are found in Table 1.

A t test was done on the data to determine where the significance was. Results showed that the mean score of the readers using graphic advance organizers was significantly higher than that of the group using no organizer, to the .05 level, (df=183) t = 1.76 $p > .05$.

Consequently, the first null hypothesis was rejected, because the below-average readers in this study who used graphic advance organizers did score significantly higher than those in the control group.

Hypothesis # 2

In the second hypothesis, the treatment group was exposed to the schematic organizer, to determine its effect upon the reading comprehension of below-average readers. Summaries comparing the schematic to the control group are found in Table 2. Results for the schematic group were slightly lower than those for the control group. The mean score for the control group was 11.5 with a standard deviation computed at 8.6. Scores for the schematic group differed very little with a mean score of 11.3 and a standard deviation of 8.5.

Another similarity between these two groups was the extreme range of scores. Specifically, control group scores

TABLE 1 (H_o1)

SUMMARY OF MEAN RAW SCORES ON READING COMPREHENSION TEST OF 15 QUESTIONS, COMPARING READERS WITH GRAPHIC ORGANIZERS TO READERS WITH NO ORGANIZER

N=185

Graphic	vs	Control	Difference	Significance
N = 105		N = 80		
Mean 12.4		11.5	.9	1.76
S.D. 9.6		8.6		

Notes:
Differences significant at .05 level
df = 183

TABLE 2 (H_o2)

SUMMARY OF MEAN RAW SCORES ON READING COMPREHENSION TEST OF 15 QUESTIONS COMPARING READERS WITH SCHEMATIC ORGANIZERS TO READERS WITH NO ORGANIZERS

N=185

Schematic	vs	Control	Difference	Significance
N = 105		N = 80		
Mean 11.3		11.5	-.2	-.47
S.D. 8.5		8.6		

Notes: Differences not significant
df = 183

extended from a perfect 15 down to a bottom 1. This pattern was duplicated by the schematic scores which ranged from a perfect 15 down to 2.

The t test tabulations revealed no significant differences between the control and schematic groups, which was typical of previous research. Consequently, the second null hypothesis was accepted.

Hypothesis # 3

Males were compared to females in the third hypothesis. The influence of both, the graphic and the schematic advance organizers upon the comprehension of below-average readers is under consideration. Table 3 gives the findings. Generally, the males did better under both treatments. When using the graphic organizer, the males produced a mean score of 11.6, or 77%, compared to a mean score of 11.1, or 74% for the females. The standard deviation for the male scores was 8.7 against 8.4 for the females.

Schematic scores for males also exceeded those made by the females. Mean scores for the male schematic group was 11.3, with a standard deviation of 9.1. The female, schematic mean score was 10.9, with a standard deviation of 8.5. Results of the t test did not reveal any significant differences, so the null hypothesis was accepted, because there was no difference between males and females using non-prose (both schematic and graphic) organizers.

TABLE 3 (H_o3)

SUMMARY OF MEAN RAW SCORES ON READING COMPREHENSION TEST OF 15 QUESTIONS, COMPARING MALES AND FEMALES

N=210

	Graphic	vs	Schematic	Difference	Significance
	MALES N = 50		N = 51		
Mean	11.6		11.3	.5	1.02
S.D.	8.7		9.1		
	FEMALES N = 55		N = 54		
Mean	11.1		10.9	.4	.66
S.D.	8.4		8.5		

Notes: Difference not significant
df = 103

Hypothesis # 4

In the fourth and final hypothesis, the two treatment groups (graphic vs schematic) are compared to determine effects upon the comprehension of below-average readers. The results are summarized in Table 4. Significant differences were found among these groups, and are discussed below.

The mean score for students using the graphic organizer was 12.4 with a standard deviation of 9.6. The mean score for the schematic group was 11.3 with a standard deviation of 8.5.

A t test was done to determine significance. The findings showed a mean score that was significantly higher for the graphic organizer over the schematic organizer to the .05 level, (df=183) $t = 2.24$ p .05. The fourth null hypothesis was therefore, rejected.

In this study readers exposed to graphic advance organizers obtained significantly higher comprehension scores than any other group.

Roserblatt intimated that benefits could be derived from the use of advance organizers with below-average readers. The results of this study seem to, at least, partially support his claim.

TABLE 4 (H_o4)

SUMMARY OF MEAN RAW SCORES ON READING COMPREHENSION TEST OF 15 QUESTIONS, COMPARING READERS WITH GRAPHIC ORGANIZERS TO READERS WITH SCHEMATIC ORGANIZERS

N=210

Graphic	vs	Schematic	Difference	Significance
N = 105		N = 105		
Mean 12.4		11.3	1.1	2.24
S.D. 9.6		8.5		

Notes:

Differences significant at .05 level
df = 208

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of this chapter is to review the data and to discuss the findings of this study. Conclusions and implications drawn from each of the four hypotheses are expanded upon. In each case a t test was calculated to determine any statistical significance. Several comparisons are made between the present study and the Rosenblatt study, which gave impetus to it. Suggested topics for additional research are found in the final section.

The most successful studies with organizers have been done at the college level. Several others have been done at the secondary and elementary levels, but without much success. This study used a middle of the road population, the ninth grade.

The present investigation was intended to be an extension of the work of William Rosenblatt, David Ausubel, and others in the use of various types of advance organizers to improve comprehension. In 1975, the Rosenblatt study used seventh graders with all levels of reading ability. This study concentrates on the below-average reader in grade nine.

The effect upon comprehension of two types of non-prose advance organizers was compared first with a control group, then between the sexes, and finally, with each other.

Two important new variables introduced in this study were concentration on the below-average reader, and the decision to switch from a written organizer to a "non-prose" organizer.

Two types of non-prose organizers were designed by this investigator for use in the current study. First, a "graphic" organizer utilized a separate pictorial representation of each major concept presented within the reading selection. None of the graphic organizers previously identified in the literature were pictorial, per se. Almost the antithesis of the graphic, the second organizer included herein, is the schematic cognitive map, a concept originating with Rosenblatt (Rosenblatt, p.6). The "schematic" is a word-diagram showing basic concepts and their relationship to each other, in as few words as possible. The schematics used in this study employ the same concept as Rosenblatt's however, the form has been modified.

Generally, the findings are two-fold. Half are consistent with most previous studies in which no comprehension improvement resulted from use of advance organizers.

The other half of the findings does indicate improved

comprehension resulting from exposure to advance organizers.

Summary and Discussion of Findings for the Total Groups

The first null hypothesis that there would be no difference in comprehension between groups exposed to graphic organizers and those using no organizers was rejected.

This information is in direct contrast to the Rosenblatt study for the same hypothesis. Possible causes for these diverse results are discussed below.

A major point of difference lies in the administration of the tests. In the present study, students remained in regular, smaller-grouped English classes while the Rosenblatt study assembled participants into one large group situation. Remaining under the direction of a familiar teacher ready to assist in smaller, more familiar surroundings, may have influenced the more positive results in the current study.

The non-prose design of the organizer may help to explain why significant differences were found in the present study. The graphic organizer was almost completely without words. By contrast, Rosenblatt's first advance organizer was a 1,000-word-plus written passage.

Another factor that may account for the differing results in these two studies is the participants. The age and level of maturity of students may be one of the prime

reasons why more successes with advance organizers have come at the college level. In keeping with that basic idea, the ninth graders in the current study appear to have done better than the younger seventh graders used in the Rosenblatt study.

Readers using graphic organizers scored significantly higher than any other group in the study. The mean raw score was 12.4; compared to 11.5 for the control group; and 11.3 for the schematic group. The difference between the control group and the graphic organizer group was significant to the .05 level ($t = 1.76$, p .05).

The old adage "one picture is worth a thousand words" is the basic concept underlying the graphic organizer in this study. However, the highly specialized pictorials used herein are distinguished from ordinary pictures. They are tailormade for each major concept presented within a reading selection, and presented in the proper time sequence.

Schematic Advance Organizers

The second null hypothesis that there will be no difference in the scores between readers using schematic advance organizers and readers using no organizer was accepted. Only a very fine line separated the scores of readers using a schematic organizer from those without one. However, scores for the control group were about the same as those for the schematic group. The mean score for the control

group was 11.5 compared to 11.3 for the schematic group. The closeness of the scores infers that the pendulum might just as easily have swung in favor of the schematic group.

Males vs Females

Numerically, the males showed a trend toward a better score than females exposed to either graphic or schematic organizers. For those of us accustomed to dealing primarily with male remedial readers, this finding was an unexpected surprise. Further research in this area could lead to more successful and sooner remediation within the male population. Despite the trend indicated, t test tabulations did not indicate significant differences between male and female results. Consequently the third null hypothesis was accepted. It stated that there will be no difference between the scores of readers using non-prose organizers because of sex.

Graphic vs Schematic Organizers

Students using the graphic organizer scored 8 percentage points better on the comprehension test than readers using the schematic organizer. This resulted in rejection of the fourth null hypothesis which stated that there would be no difference between the scores between readers using graphic advance organizers and those using schematic advance organizers. It is also worth repeating the point that readers using graphic organizers also did better than

the control groups by 7 percentage points. That the struggling below-average reader might benefit from the constant use of graphic organizers is a matter worthy of additional consideration.

Conclusion and Implications

Many times the secondary content teacher has neither the time nor what is often felt the skill to develop appropriate "readiness" activities for daily classroom use. The present study seems to offer non-prose advance organizers as a readily accessible tool, particularly for use with the poor reader. Following the basic format for creating graphic or schematic organizers appears to be relatively easy. When condensed into its simplest terms there appears to be four major elements of concern for creating original, effective organizers designed to improve reading comprehension. Specifically, the content teacher himself could (a) review the selection to be read (learning passage) to determine every major concept readers should retain (b) determine whatever ideational and sequential relationships exist between these main ideas (c) create some kind of "visual" representation depicting these main ideas in whatever relationships presented in the learning passage. Less artistic teachers could employ the services of any fairly competent student artist to "visualize" a desired graphic. Even though the material used in this study was

taken from the literature of an English class, the technique for developing graphics and/or schematics seem readily applicable to all content areas.

Suggestions for Further Research

The Rosenblatt study called for replication with certain modifications. This study has partially accepted that challenge; and modifications did include the use of more than one reading passage and more than one treatment.

Perhaps these changes account, in part, for the reversal of some of the findings in the original study (i.e. one of the non-prose organizers did improve comprehension). Even more positive results may be forthcoming if research is continued on non-prose advance organizers. Following are suggestions for further research:

1. Use an all male population, since they did better overall, in developing graphics and cognitive mapping schematics that relate to both physical and vocational education materials.

2. Students in this investigation were given only a minimal guidance and discussion period. Perhaps exposure to advance organizers over an extended period of time would yield better results.

3. The popularity of team teaching in some school districts implies a possible need for advance organizers that depict correlations between concepts and content

areas. This could be especially applicable to the slower reader.

This study has given additional support to the concept of non-prose advance organizers as another possible instrument for improving the comprehension of the below-average reader.

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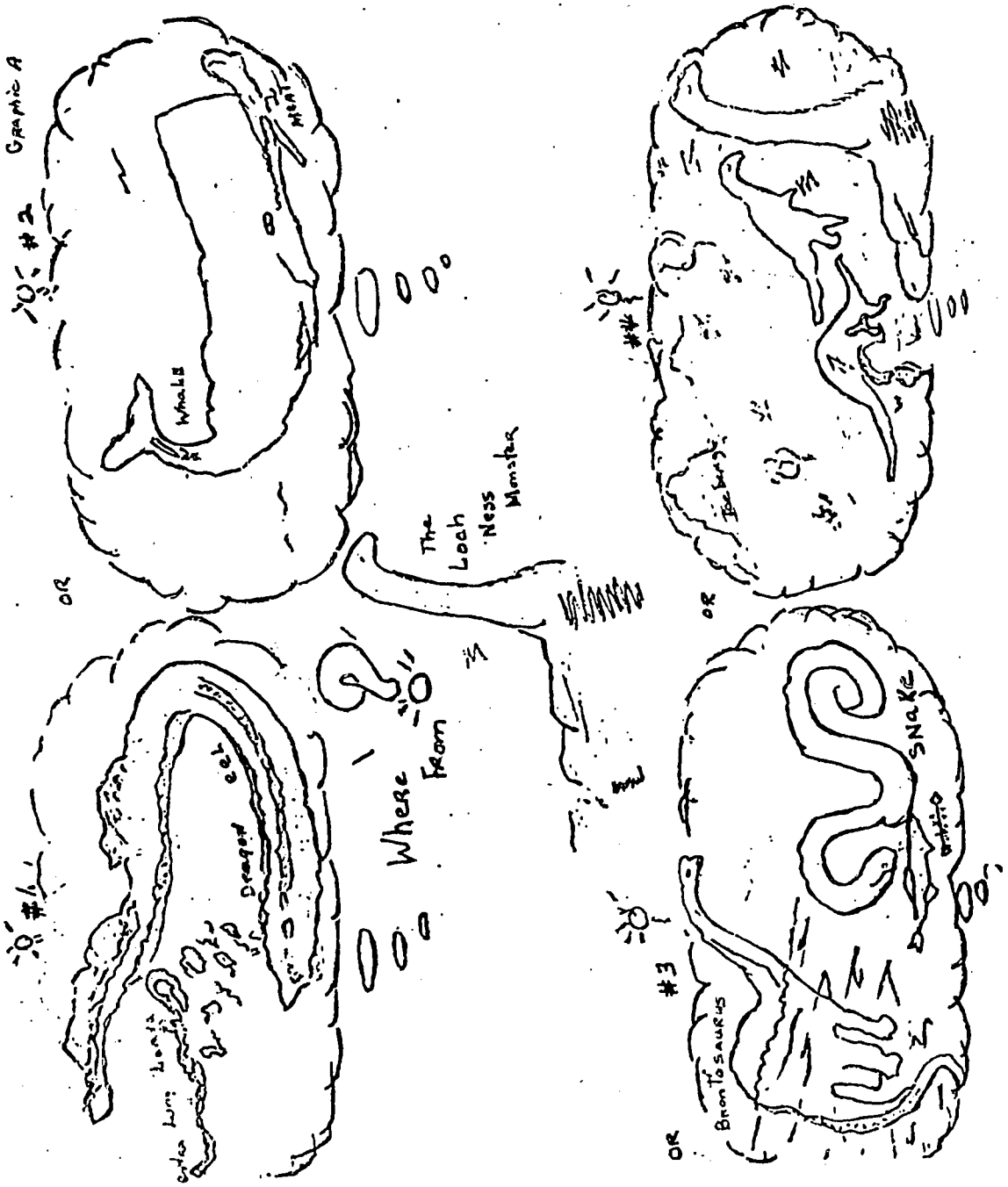
APPENDIX A

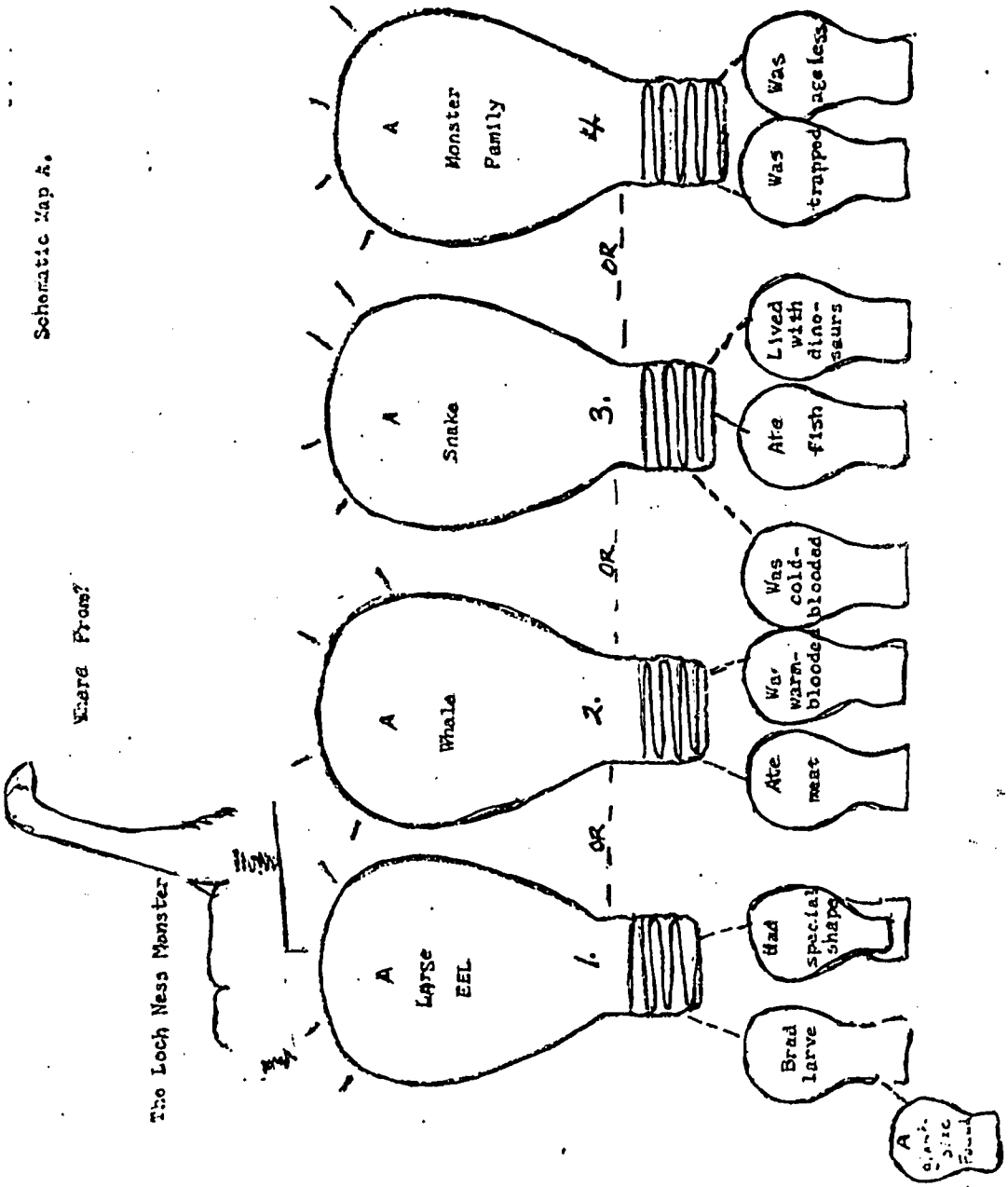
GRAPHIC ORGANIZER: A - LOCH NESS


Graphic A
#2
Whales
Mermaid
OR
The Loch Ness Monster
#1
Where From
Dragon
OR
#3
Brontosaurus
Snake
OR

APPENDIX B

SCHEMATIC COGNITIVE MAPPING ORGANIZER: A LOCH NESS

Schematic Map A.



APPENDIX C

READING SELECTION: LOCH NESS

THE LOCH NESS MONSTER

For hundreds of years, people have reported sighting a strange-looking beast in the dark waters of Loch Ness, a lake in Scotland.

The Loch Ness monster is said to have been first sighted in Scotland about 1,500 years ago. In the hundreds of years since, there have been over 3,000 reported sightings of "Nessie" as the monster is called.

Those who claim to have seen her describe Nessie as an ugly, shiny, blackish-greenish beast. She may be anywhere from five to sixty feet long, from one to five feet wide. She is said to have a snake-like head and a long neck sticking out of a body with from one to seven humps like a camel.

Exactly what is Nessie? There are several theories about this creature. One theory states that she is a very large eel. Eels can fold up like an accordian, which would explain the sightings of camel-like humps. Eels also breed by laying eggs which hatch into three-inch larva. Now, a six-foot larva was found not too long ago. An eel from such a larva would be capable of growing to be 90 feet long!

Another theory is that Nessie is a meat-eating, sea going warm-blooded animal, like the whale. A third theory says that she is a large, fish-eating, cold-blooded animal, like a snake. It also states that she may have existed about the same time as the dinosaur. One such large creature was caught back in 1947.

Scientists believe that from 5,000 to 10,000 years ago Loch Ness was part of a sea. The sea level was changed by melting ice at the end of a period in the earth's history, called the Ice Age.

At that time, the lake was cut off from the sea by a narrow strip of land. Many sea animals were trapped in this lake. Some of them, scientists believe, may have continued to exist through the ages.

If that's so, the Loch Ness monster is not one, but a family of monsters. If it does exist at all, it is ageless!

APPENDIX D

TEST OF COMPREHENSION: LOCH NESS

COMPREHENSIVE QUESTIONS

1. Is there really a Loch Ness monster?
   a. yes
   b. no
   c. probably
   d. We're trying to find out
2. Is it an imaginary creature, like the dragon?
   a. yes
   b. no
   c. probably
3. The Loch Ness monster was first sighted about:
   a. 1,500 years ago
   b. last year
   c. in 1900
   d. in 1776
4. The creature may have existed about the same time as:
   a. an elephant
   b. an ant
   c. a dinosaur
   d. a sabre-toothed tiger

5. The Loch Ness monster may be part of a:
   a. club
   b. family
   c. swarm
   d. tribe
6. In the statement, "there are several theories about the creature", the work theories means:
   a. conditions
   b. promises
   c. ideas
7. The more information scientists can prove about the Loch Ness monster, the more people will believe the theories:
   a. probably not true
   b. true
   c. impossible
   d. just a joke
8. There is little doubt about where the creature came from?
   a. true
   b. false

9. Larva is one stage of:
   a. reproduction
   b. eating
   c. dying
10. The monster is sometimes called:
   a. Lucky
   b. Sam
   c. Nellie
   d. Nessie
11. None of the theories describes the creature as a:
   a. large eel
   b. whale
   c. elephant
   d. snake
12. The dinosaur is a creature that roamed the earth:
   a. thousands of years ago
   b. a hundred years ago
   c. recently
   d. in the last fifty years

13. A large snake-like animal was found in:

    a. 1947

    b. 1974

    c. 1956

    d. 1960

14. People have reported seeing a Loch Ness monster:

    a. for hundreds of years

    b. since 1970

    c. only in the last three years

    d. in the last decade

15. A "theory" is:

    a. a science problem

    b. a question

    c. an answer

APPENDIX E

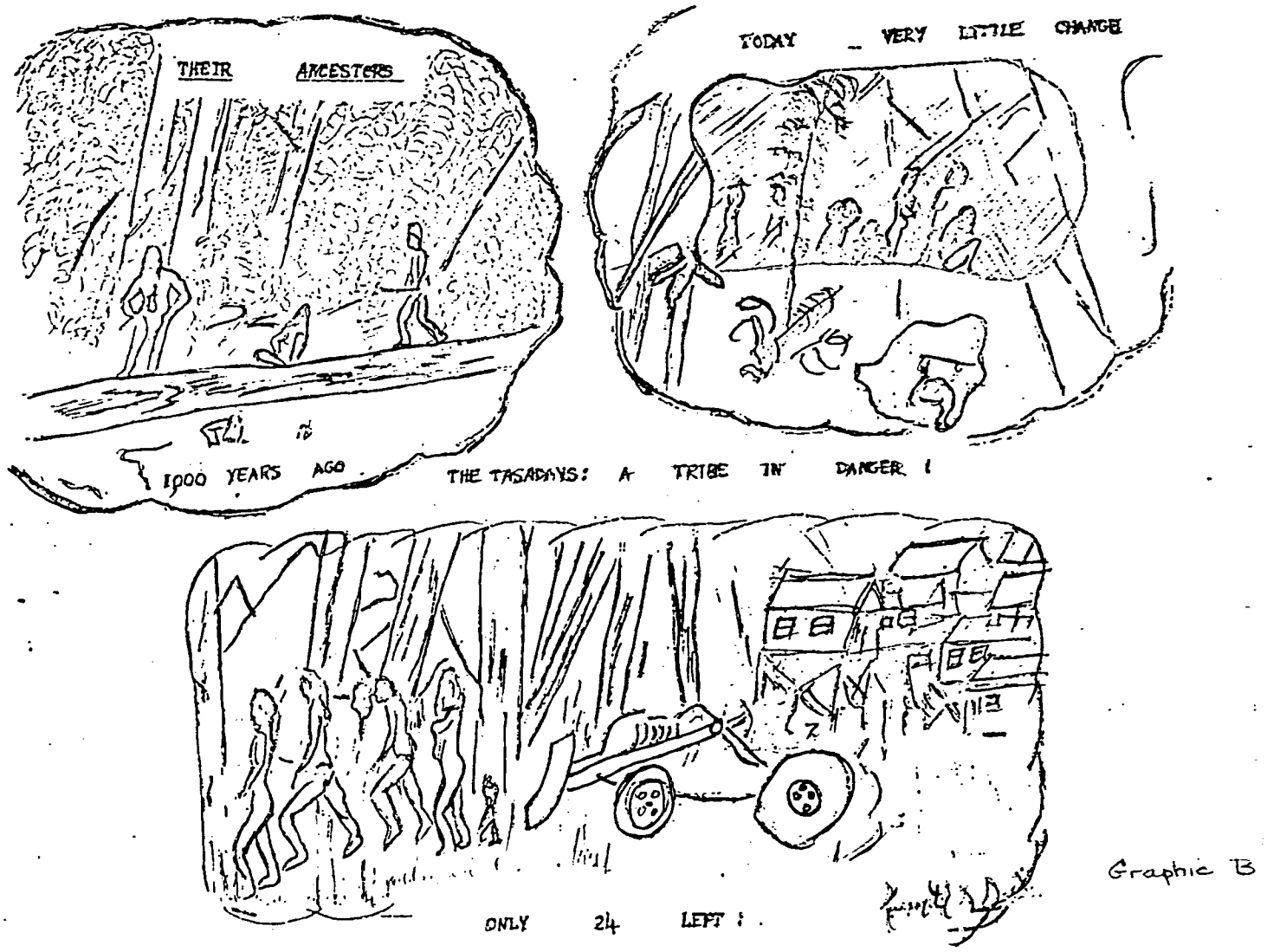
SKILLS TESTED BY SPECIFIC QUESTIONS ON TEST OF COMPREHENSION: LOCH NESS

SKILLS TESTED BY QUESTIONS.

Question	Skill
1	understanding the main idea
2	making a judgment
3	recalling specific facts
4	isolating details
5	recalling specific facts
6	vocabulary
7	drawing a conclusion
8	forming an opinion
9	retaining concepts
10	recalling specific facts
11	isolating details
12	isolating details
13	recalling specific facts
14	retaining concepts
15	understanding the main idea

APPENDIX F

GRAPHIC ORGANIZER: B - TASADAYS


THEIR ANCESTORS
1000 YEARS AGO
TODAY - VERY LITTLE CHANGE
THE TASADAYS: A TRIBE IN DANGER !
ONLY 24 LEFT !

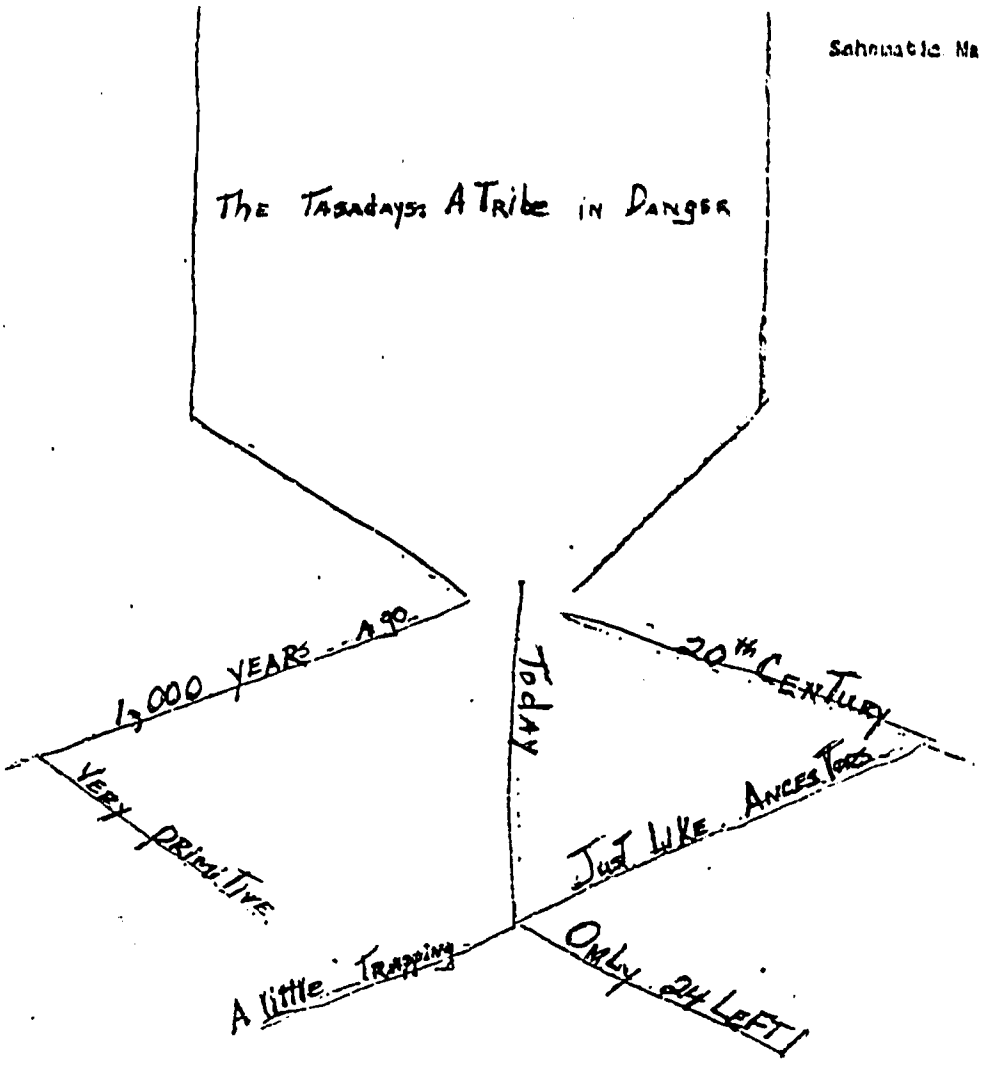
Graphic B

APPENDIX G

SCHEMATIC COGNITIVE MAPPING ORGANIZER: B

TASADAYS

Schematic Map B



APPENDIX H

READING SELECTION: TASADAYS

THE TASADAYS

A tribe in Danger

The Tasadays are a small primative tribe who live in the Philippine Islands. They exist in much the same way as their ancestors did thousands of years ago. But they are in danger of being wiped out.

The Tasadays are a primitive tribe of 24 people. They live in the Philippines on the island of Mindanao. The people make their homes in the middle of a very large rain forest, high up in the mountains. (A rain forest is a thick jungle, in which it is usually very hot and sticky.)

The tribe lives in the same way now as it did many thousands of years ago, during the Stone Age. Its members still make fire by rubbing two sticks together. They also still use simple stone axes and tools for digging.

One member of the tribe serves as the food gatherer for all 24 members. It takes him only a couple of hours a day to collect the simple foods on which the tribe exists. The Tasaday diet comes from the forest around them. They eat frogs and crabs which are caught by quick hands in nearby mountain streams. To this they add the wild fruits, yams and leaves which can be picked in the forest.

Since the Tasadays are able to gather their food from the forest around them, they do not farm or hunt animals. Only recently have they begun to set traps for deer, pigs, monkeys and mice. However, they don't trap animals very often because they would rather live in harmony with them.

Although they are simple people who live in peace with the forest world around them, the Tasadays' way of life is now in danger. Loggers are driving roads into the forests and cutting down trees for lumber. The forest is the source of life for the Tasadays. As the forests are cut down, the Tasadays will have to move higher and higher into the mountains to find food and shelter. One day they will run out of forest space. When that happens, the last of the Stone-Age tribes will have passed from this earth.

APPENDIX I

TEST OF COMPREHENSION: TASADAYS

COMPREHENSIVE QUESTIONS

1. The best title for the story is:
   a. "The Tasadays - Food Gatherers"
   b. "The Tasadays - A Stone-Age Tribe"
   c. "The Tasadays - A Modern Tribe"
   d. "The Tasadays - A Forest People"
2. What kind of tribe is the Tasadays?:
   a. modern
   b. Indian
   c. primitive
   d. huge
3. Why is the story called "A Tribe in Danger"?:
   a. because soldiers may kill them
   b. because they all have a virus
   c. because their lives depend on the forest
   d. because they have no way of feeding themselves
4. The wild fruits, yams, and leaves which they eat come from:
   a. the streams
   b. farms
   c. the forest
   d. CARE packages

5. The relationship of the tribe to the animals in the forest is one of:
   a. harmony
   b. fear
   c. surprise
   d. danger
6. The Tasadays may become like the bald eagle and the alligator. They may:
   a. be growing in number
   b. be dying out
   c. found in new places
7. Choose the best meaning for the term "primitive man":
   a. living as in earliest times
   b. living as in the 1800's
   c. living as in modern times
   d. living as in 1998
8. The tribe lives in:
   a. The Hawaiian Islands
   b. The Philippine Islands
   c. The Virgin Islands
   d. The Cape May Islands

9. In the rain forest it is:
   a. very wet and foggy
   b. very hot and sticky
   c. very cold and dreary
   d. very warm and dark
10. The diet of the Tasadays includes:
   a. frogs and crabs
   b. steak and potatoes
   c. corn mush and bacon
   d. eggs and bacon
11. The tribe has changed a little; sometimes it sets traps for:
   a. monkeys and mice
   b. alligators
   c. king snakes
   d. black snakes
12. The tribe still lives like:
   a. its ancestors
   b. the colonists in America
   c. the early Romans
   d. the tribes all over the Pacific Ocean

13. Choose the term closest to the number of Tasadays remaining:

    a. very few

    b. many

    c. hundreds

    d. thousands

14. If you like sweet potatoes, you'll like _____, because they look and taste alike:

    a. pomegranates

    b. yams

    c. okra

    d. peas

15. The Tasadays are a _____ tribe:

    a. warlike

    b. fun-loving

    c. peaceful

    d. musical

APPENDIX J

SKILLS TESTED BY SPECIFIC QUESTIONS ON TEST OF COMPREHENSION: TASADAYS

SKILLS TESTED BY QUESTIONS

Question	Skill
1	understanding the main idea
2	retaining concepts
3	drawing a conclusion
4	isolating details
5	making a judgment
6	drawing a conclusion
7	forming an opinion
8	recalling specific facts
9	recalling specific facts
10	isolating details
11	retaining concepts
12	retaining concepts
13	making a judgment
14	drawing a conclusion

APPENDIX K

LIST OF RAW SCORES: LOCH NESS

LIST OF RAW SCORES

LOCH NESS

CONTROL			GRAPHIC			SCHEMATIC		
Sex	Stud. No.	Score	Sex	No.	Score	Sex	No.	Score
F	1	15-	M	1	15	F	1	15
F	2	14	M	2	15-	F	2	15-
F	3	14	M	3	14	M	3	14
M	4	14-	M	4	14	F	4	14
F	5	13	M	5	14	M	5	14-
F	6	13	F	6	14-	F	6	13
M	7	13	M	7	13	F	7	13
M	8	13-	F	8	13	M	8	13
F	9	12	M	9	13	M	9	13
M	10	12	F	10	13	F	10	13
M	11	12	F	11	13	F	11	13
F	12	12	M	12	13	F	12	13-
F	13	12	F	13	13	M	13	12
M	14	12	M	14	13	M	14	12
M	15	12-	M	15	13-	M	15	12
M	16	11	F	16	12	F	16	12
F	17	11	M	17	12	M	17	12
M	18	11	M	18	12	F	18	12
M	19	11	M	19	12	M	19	12
M	20	11	F	20	12	F	20	12-
F	21	11-	M	21	12	M	21	11
F	22	10	M	22	12	F	22	11
M	23	10	M	23	12	F	23	11
M	24	10	M	24	12	M	24	11
F	25	10	F	25	12	F	25	11
M	26	10-	M	26	12	M	26	11
F	27	9	F	27	12	F	27	11
F	28	9	F	28	12-	F	28	11-
M	29	9	F	29	11	F	29	10
F	30	9	F	30	11	M	30	10
M	31	9	F	31	11	F	31	10
M	32	9	M	32	11	M	32	10
M	33	9-	F	33	11	F	33	10
M	34	8	F	34	11	M	34	10-
M	35	8-	F	35	11-	M	35	9
F	36	7	F	36	10	M	36	9
M	37	6-	F	37	10	M	37	9
M	38	5-	F	38	10	M	38	9
F	39	3-	F	39	10	M	39	9
M	40	1	F	40	10	F	40	9

LIST OF RAW SCORES (Continued)

LOCH NESS

CONTROL Stud. Sex	No.	Score	GRAPHIC Sex	No.	Score	SCHEMATIC Sex	No.	Score
			F	41	10-	M	41	9-
			M	42	9	F	42	8
			F	43	9	M	43	8
			M	44	9	F	44	8-
			F	45	9-	M	45	7
			F	46	8-	F	46	7
			M	47	7-	M	47	7
			F	48	6	F	48	7
			M	49	6-	F	49	7-
			M	50	4	F	50	6
			F	51	4	F	51	6-
			M	52	4	F	52	5-
			F	53	-	M	53	2-

APPENDIX L

LIST OF RAW SCORES: TASADAYS

LIST OF RAW SCORES

TASADAYS

CONTROL			GRAPHIC			SCHEMATIC		
Sex	Stud. No.	Score	Sex	No.	Score	Sex	No.	Score
M	1	15	M	1	15	M	1	15
M	2	15	F	2	15	M	2	15
M	3	15	F	3	15	M	3	15
M	4	15	F	4	15	M	4	15
F	5	15-	F	5	15	F	5	15
F	6	14	F	6	15	M	6	15
F	7	14	M	7	15	F	7	15
F	8	14	F	8	15	M	8	15
F	9	14	F	9	15	M	9	15
F	10	14	M	10	15	M	10	15
F	11	14	M	11	15-	M	11	15
F	12	14	M	12	14	F	12	15
M	13	14	F	13	14	F	13	15-
M	14	14	M	14	14	F	14	14
M	15	14	M	15	14	M	15	14
M	16	14	M	16	14-	F	16	14
M	17	14	F	17	13	F	17	14
M	18	14-	F	18	13	F	18	14
F	19	13	M	19	13	M	19	14
F	20	13	F	20	13	M	20	14
F	21	13	F	21	13	F	21	14
M	22	13	M	22	13	M	22	14
M	23	13	F	23	13	F	23	14-
M	24	13	M	24	13	M	24	13
M	25	13	M	25	13-	F	25	13
F	26	13-	F	26	12	M	26	13
F	27	12	M	27	12	F	27	13
F	28	12	F	28	12	F	28	13
F	29	12	M	29	12	F	29	13
M	30	12	F	30	12	M	30	13
M	31	12	M	31	12	F	31	13
M	32	12	F	32	12	F	32	13-
M	33	12-	M	33	12-	M	33	12
M	34	11	F	34	11	M	34	12
M	35	11-	M	35	11	F	35	12
M	36	10	F	36	11	F	36	12
M	37	10-	M	37	11	F	37	12
M	38	7-	F	38	11	F	38	12
M	39	4-	F	39	11	F	39	12-
F	40	3	M	40	11-	M	40	11

LIST OF RAW SCORES (Continued)

TASADAYS

CONTROL			GRAPHIC			SCHEMATIC		
Sex	Stud. No.	Score	Sex	No.	Score	Sex	No.	Score
			F	41	10	F	41	11
			F	42	10-	F	42	11-
			M	43	9	F	43	10
			F	44	9	F	44	10-
			M	45	9	F	45	9
			M	46	9	F	46	9
			F	47	9-	F	47	9-
			M	48	8-	F	48	8-
			F	49	7	M	49	6-
			M	50	7	F	50	5
			F	51	7-	M	51	5-
			M	52	5	M	52	4-
			M	53	5-	M	53	-

COURSE WORK AT RUTGERS

Summer, 1974		Instructor
290:501	Introduction to Educational Tests and Measurements	Dr. Geyer
610:522	Reading Materials for Young Adults	Dr. Simpson
Fall, 1974		
299:561	Foundations of Reading Instruction	Dr. Swalm
Spring, 1975		
290:514	Introduction to Adolescent and Young Adult Years	Dr. Montare
299:564	Remedial Reading	Dr. Zelnick
Summer, 1975		
299:565	Laboratory in Remedial Reading	Dr. Goldsmith
Fall, 1975		
290:509	Abnormal Psychology	Dr. Gibbons
290:540	Introduction to Learning	Dr. Cox & Dr. Gillooly
Spring, 1976		
299:515	Reading for Secondary, College and Adult Students	Dr. Goldsmith
Fall, 1976		
299:566	Seminar in Reading Research and Supervision	Dr. Swalm
Spring, 1977		
299:599	Masters Thesis Research	Dr. Fry

VITA

Name: Cynthia King Hall

Address: 1191 Woodland Avenue, Scotch Plains, N.J. 07060

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Educational Background:

High School: Dunbar High School
Washington, D.C.
June, 1951

College: District of Columbia Teachers College
Washington, D.C.
B.S. Secondary Education - January, 1956
Major: English Minor: History

Jersey City State College
Jersey City, New Jersey
Attended 1970

Kean
Union, New Jersey
Attended 1973

Professional Experience:

1976-1977 Member - Secondary Reading Advisory Committee on Minimum Standards for the State of New Jersey
Appointed by the New Jersey Commission of Education

1976-1977 Director of Right-to-Read for Plainfield High School, Plainfield, N.J.
Appointed by Superintendent of Schools

1976-1977 Member - Minority Groups Advisory Committee
Appointed through State of New Jersey Department of Education

1974-1975 Teaching Assistant - Rutgers University Study Skills Center

VITA (Continued)

Cynthia King Hall

19[illegible]8-present	Teacher of Readi[illegible] - Plainfield High Plainfield, New J[illegible]rsey
1966	Title I - Reading Teacher Woodbridge Township, New Jersey
1965	Teacher of Reading Willis Diagnostic Center Plainfield, New Jersey
1960-1964	Teacher of English, Social Studies, and Physical Education High and Middle Schools South Plainfield, New Jersey
1958-1957	Teacher of English and Social Studies Terrell Junior High Washington, D.C.