Reading Comprehension: The Effects of a Language Experience Organizer and a Teacher Structured Vocabulary Organizer as Prereading Activities

Cindy Harkness

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READING COMPREHENSION: THE EFFECTS OF A LANGUAGE EXPERIENCE ORGANIZER AND A TEACHER STRUCTURED VOCABULARY ORGANIZER AS PREREADING ACTIVITIES

THESIS

Submitted to the Graduate Committee of the Department of Curriculum and Instruction Faculty of Education State University of New York College at Brockport in Partial Fulfillment of the Requirements for the Degree of Master of Science in Education

by
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Abstract

Below level tenth grade language arts students were given both a posttest and a delayed posttest to measure their comprehension of five selected reading passages. The students were divided into two groups. One group received a language experience advance organizer prior to reading the passages. The other group received a teacher structured vocabulary organizer prior to reading the passages.

No significant difference was found between the language experience advance organizer group and the teacher structured vocabulary group in comprehension as measured by a posttest and a delayed posttest. Although the language experience advance organizer group achieved a higher mean on both the posttest and the delayed posttest, the difference was due to chance. The results of this study are consistent with the findings of Anderson and Freebody (1983). According to Anderson and Freebody (1983), the understanding of a particular text depends only partially on an accurate identification of words. A replication of the study using a different population was suggested.
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Chapter I
Statement of the Problem

Purpose
The purpose of this study was to investigate the effectiveness of the language experience approach when used as an advance organizer prereading activity as compared to the effectiveness of a teacher structured vocabulary organizer when used as a prereading activity with tenth grade language arts students. The study investigated the effects of the two methods on reading comprehension and retention.

Need for the Study
Current research in the area of reading has focused on the various pedagogical strategies that most efficiently support reading. An important aspect of this research is the nature of reading comprehension—the search for and construction of meaning. Spiro and Tierney (1979) state, "The extent to which the reader's understanding represents the author's ideas will depend on the reader's background of experience, abilities, purposes, and reader predispositions" (p. 132). Therefore, the reading process is a dynamic interaction among the author, the text, and the reader.
Gestalt psychology (cited in Ausubel, 1958) introduced the concept of "assimilation" as, "a process whereby memory traces are obliterated or replaced by similar traces in cognitive structure that are relatively more stable" (p. 153). Bartlett (cited in Ausubel, 1958) conceptualizes a 'schema' as, "an organizing and orienting attitude or affect resulting from the abstraction and articulation of past experience" (p. 155). Ausubel (1968) also views comprehension in terms of an assimilation process involving a progressive process between the learning material and existing cognitive structure. The learning material is assimilated into the reader's cognitive structure through an anchoring process. As a result of this process, "a highly inclusive and established ideational system comes to represent the import of less generalized ideas, the identifiability of which is correspondingly obliterated" (p. 155).

The constructive theory of reading comprehension, as noted by Spiro and Tirre (1980), "posits a process of active interaction between information explicit in text and information contained in pre-existing knowledge structures or schemata" (p. 204). Thus, a major component of the comprehension process is the reader's existing cognitive framework which includes pre-existing knowledge or schemata.

Unfortunately, not all readers are adept at using prior knowledge in processing new material. It is therefore up to the
teacher to help the students learn strategies which mediate between the text and the reader. The teacher must structure the learning environment to stimulate and develop a given reader's understanding. If necessary, the teacher must build background or provide analogy in order to foster comprehension.

The purpose of the advance organizer, according to Ausubel (1963), is to relate new material to the already existing cognitive structure of the learner. In reference to Ausubel, Barnes (1975) states, "It is his assumption that the learner's cognitive structure is organized hierarchically in terms of highly inclusive conceptual traces under which are subsumed less inclusive subconcepts as well as specific informational data" (p. 637). Such organizers, in Ausubel's (1963) own words, provide the learner with a subsumer which

(a) gives him a general overview of the more detailed material in advance of his actual confrontation with it, and (b) also provides organizing elements that are inclusive of and take into account most relevantly and efficiently both the particular content contained in the material and relevant concepts in the cognitive structure. It thereby makes use of established knowledge to increase the familiarity and learnability of new material. (p. 82)

The traditional advance organizer offers information prior to the main passage, usually in the form of one or more short prose paragraphs that, according to Delaney, Kinnucan, and Tyler (1983), "contain key concepts related to those in the
main passage, but at a higher level of abstraction, generality, and inclusiveness, and explained so as to be easily grasped by the reader" (p. 364). Since comprehension requires the integration of new information with more abstract information already present in the learner's cognitive structure, students' participation in the construction of the advance organizer would seem to offer a viable channel into which the existing cognitive structure of the students may surface and develop.

The language experience approach to teaching reading offers such participation. Traditionally, the language experience approach used the students' own language as a basis for reading material. Certain modifications of the approach, however, have been successfully employed to emphasize the students' experiences and oral language.

Although most researchers do not prescribe a strict adherence to pure language experience methodology, they do suggest a common procedure to be used when adapting the language experience approach to high school students (Cohn, 1981; Handel, 1976; Kennedy and Roeder, 1975; Mallett, 1977; Meagher, 1980; Rusnak, 1980). Most of the language experience related approaches begin each lesson with a stimulus which is almost always provided by the teacher. The stimulus could be a picture, movie, field trip, question, or an oral reading by the teacher.
A class discussion generally follows the stimulus as the primary emphasis is on communication and self expression. The class discussion, or oral communication, leads to written communication. The function of the discussion is to generate existing knowledge, ideas, and experiences of the students throughout the classroom. The purpose of writing, whether done by the teacher or students, would be to solidify those aspects focused upon during the discussion. As the teacher leads the class through the language experience activity, he/she builds bridges between the existing cognitive structure of the learners and the new material he/she is about to present. This activity, therefore, would in fact be an advance organizer.

Another area often associated with reading comprehension is that of vocabulary instruction. According to Pany, Jenkins, and Schreck (1982), "limited attention has been given to the study of the relationship between learning word meanings and comprehending reading text containing newly acquired vocabulary" (p. 202). Spache and Spache (1973), argue, "it is sufficient to say that comprehension is significantly promoted by attention to vocabulary growth" (p. 78). Anderson and Freebody (1979), however, noted,

   to prove that knowing the meaning of individual words has an important instrumental role in understanding text...it would need to be shown...that people are
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helped to comprehend a text if they learn the meanings of the unfamiliar words it contains. (p. 7)

Questions to be Answered

The questions investigated in this study were as follows:

1. Is there a statistically significant difference between the language experience approach advance organizer group and the teacher structured vocabulary organizer group in reading comprehension as measured by a test of retention?

2. Is there a statistically significant difference between the language experience approach advance organizer group and the teacher structured vocabulary organizer group in reading comprehension as measured by a delayed posttest of retention?

Definition of Terms

Language Experience Approach Advance Organizer. Paragraphs written by the students following a teacher led discussion in advance of the learning material itself.

Below Grade Level Readers. Those students who have scored below grade level on the reading comprehension subtest of the Test of Achievement and Proficiency (Houghton Mifflin Co.).

Teacher Structured Vocabulary Organizer. A prereading activity in which five to ten vocabulary words from the reading material are defined and discussed in class. The students are also instructed to use each word in a sentence and write
that sentence on paper.

Limitations of the Study

The language experience approach advance organizer group consisted of 20 students and the teacher structured vocabulary organizer group consisted of 20 students. All of the students were tenth grade students reading below grade level.

There were four different classes and two different teachers involved in this study. Teaching styles and enthusiasm were not compared.

Summary

This study investigated the language experience approach advance organizer and the teacher structured vocabulary organizer as a prereading activity for secondary school below level readers. Little research has been conducted with adolescents in the field of language experience. This study attempted to determine the effectiveness of a language experience approach advance organizer as compared to the effectiveness of a teacher structured vocabulary organizer as a prereading activity.
Chapter II

Related Literature

Purpose

The purpose of this study was to investigate the effectiveness of the language experience approach when used as an advance organizer prereading activity as compared to the effectiveness of a teacher structured vocabulary exercise when used as an advance organizer prereading activity with tenth grade language arts students. Literature relevant to this study lies in four broad areas: reading comprehension, advance organizers, the language experience approach, and vocabulary.

Comprehension

The nature of reading comprehension continues to gain the attention of educators and researchers. Up until the beginning of the 20th century, investigators were mainly interested in studying the mechanical aspects of reading such as eye movement.

As more attention focused on the nature of reading comprehension, it became clear that comprehension was an intricate, complex process involving many cognitive functions. Gestalt (as cited in Ausubel, 1968) introduced the concept of "assimilation" as, "a process whereby memory traces are obliterated or replaced by similar traces in cognitive structure.
that are relatively more stable" (p. 153). With the concept of assimilation, Gestalt introduced the importance of the existing cognitive structure. Bartlett (as cited in Ausubel, 1958), "conceptualizes a 'schema' as an organizing and orienting attitude or affect resulting from the abstraction and articulation of past experience" (p. 155).

Like Gestalt, Ausubel (1968) described comprehension as an assimilation process involving a progressive process between the learning material and existing cognitive structure. Ausubel (1968) refers to the process whereby new material is assimilated into the reader's cognitive structure as an anchoring process. As a result of the anchoring process, "a highly inclusive and established ideational system comes to represent the import of less generalized ideas, the identifiability of which is correspondingly obliterated" (p. 155).

The reading process, in order for understanding to occur, must be a dynamic interaction among the author, the text, and the reader. Spiro and Tierney (1979) state, "The extent to which the reader's understanding represents the author's ideas will depend on the reader's background of experience, abilities, purposes, and reader dispositions" (p. 132).

Spiro and Tirre (1980) refer to the constructive theory of
reading comprehension which "posits a process of active interaction between information explicit in text and information contained in pre-existing knowledge structures or schemata" (p. 204). The text merely provides directions for the reader to construct meaning by using previously acquired knowledge.

One of the most recent schools of thought in the area of reading is the psycholinguistic model of reading. According to the psycholinguistic model, reading is a process which produces meaning from the reader's knowledge of oral language, semantics, syntax, graphophonic cues, world knowledge and beliefs, and personal history. Thus, a major component of the comprehension process is the reader's existing cognitive framework which includes pre-existing knowledge or schemata (Spiro, 1980).

Although the importance of prior knowledge has been clearly established, practical strategies need to be developed in aiding readers to apply previous knowledge to the comprehension process. If necessary, the teacher must build background or provide analogy to foster comprehension.

**Advance Organizers**

Ausubel (1963) conducted a detailed investigation into the area of comprehension. In regard to the relationship between new material and existing cognitive structure, Ausubel stated,
"Meaningful reception learning occurs as potentially meaningful material enters the cognitive field and interacts with and is appropriately subsumed under a relevant and more inclusive conceptual system" (p. 25). As a result of his theory, Ausubel devised the 'advance organizer', a learning device designed to relate new material to the already existing cognitive structure of the learner. In reference to Ausubel and the advance organizer, Barnes (1973) stated, "It is his assumption that the learner's cognitive structure is organized hierarchically in terms of highly inclusive conceptual traces under which are subsumed less inclusive subconcepts as well as specific informational data" (p. 637). Such organizers, according to Ausubel (1963), provide the learner with a subsumer which (a) gives him a general overview of the more detailed material in advance of his actual confrontation with it, and (b) also provides organizing elements that are inclusive of and take into account most relevantly and efficiently both the particular content contained in the material and relevant concepts in the cognitive structure. It thereby makes use of established knowledge to increase the familiarity and learnability of new material. (p. 82)

The traditional advance organizer is a short introductory paragraph given in advance of new material. According to Delaney, Kinnucan, and Tyler (1983), advance organizers "contain key concepts to be related to those in the main passage, but at a higher level of abstraction, generality, and inclusiveness, and explained so as to be easily grasped by the reader" (p. 364).
The advance organizer has been discussed in educational circles for over 75 years, but it has only come into the field of research during the past 25 years. Whether or not the use of advance organizers facilitates learning is still a controversial issue as the research has failed to produce consistent results.

There are a number of studies that support the contention that advance organizers do, in fact, facilitate learning. Ausubel himself conducted many of these studies. In a study involving 120 college seniors, Ausubel (1960) compared the effectiveness of a 500 word advance organizer with an historical passage of the same length. The advance organizer was written at a higher level of abstraction and generality than the learning material. The historical passage was written to create interest and did not relate directly to the concepts tested. There was a significant difference at the .01 level of significance in favor of the advance organizer.

In another study involving college students, Ausubel and Fitzgerald (1961) compared three types of introductory passages, a comparative advance organizer, an expository organizer, and an historical introduction. The comparative organizer pointed out the differences and similarities between the material to be learned (Buddhism) and already familiar material (Christianity).
The concepts of Christianity served as the existing knowledge which was compared to the concepts of Buddhism. The expository organizer presented principal Buddhist doctrines at a higher level of abstraction, generality, and inclusiveness without making a comparison to Christianity. The historical introduction provided historical and human interest information. An immediate posttest and a delayed posttest were given. On the immediate posttest, the comparative organizer group scored significantly higher \( (p < .05) \) than the expository organizer and historical introduction groups. On the delayed posttest, both the expository and comparative groups scored significantly higher \( (p < .05, p < .02) \) than the historical introduction group.

Ausubel and Fitzgerald (1962) conducted another study with college undergraduates which compared an expository advance organizer to an introductory passage in the study of endocrinology of pubescence. A comparison of the total expository advance organizer group compared to the total introductory passage group produced nonsignificant results \( (p < .07) \). Using verbal ability scores on SCAT as a basis for blocking, the researchers found significant results for the lower one-third group in favor of the expository organizer \( (p < .01) \).

In contrast to the findings by Ausubel and Fitzgerald (1962) where the advance organizer facilitated learning for
those students whose SCAT scores were in the lower one-third of the distribution, Groteluescher and Sjogren (1968) concluded that the advance organizer facilitated learning for intellectually gifted adults and graduate students. Groteluescher and Sjorgren (1968) conducted two studies, one involving 24 intellectually gifted adults and the other involving 48 graduate education students. The researchers compared three experimental treatment groups and one control treatment group. The experimental treatment contained key ideas in the study of mathematics, and the control treatment consisted of historical and descriptive information about units of measurement. They concluded that both experimental treatment materials facilitated both the learning of new material and transfer.

Ausubel and Youssef (1963) compared the effects of the advance organizer and a nonideational passage of historical and biographical nature using 162 college seniors. The treatment lasted for four days and included a posttest and a delayed posttest administered 10 days after completion of the treatment. They reported significance in favor of the advance organizer ($p < .01$) when verbal ability was held constant by means of analysis of covariance.

In Ausubel's studies, multiple choice tests were used which only measured retention of information contained in the
subordinate passages and not in the organizer themselves.

Rickards (1975-1976) investigated the retention of both the advance organizer and the subordinate facts. For this purpose, he employed a free recall test which was scored for retention of both the organizers and their related facts. Each organizer consisted of a 10-12 word sentence which was interspersed in the text contiguous with the potential subsumable paragraph. A control group received interspersed statements drawn from common knowledge. Superordinate prestatements (advance organizers) led to significantly more recall of organizers and subordinate facts than any other type of inserted statement.

Rickards (1975-1976) contended, "that advance organizers produced two distinct processes—subsumption (Ausubel) of related material and abstraction of incidental concepts" (p. 599).

Lawton (1977) tested Ausubel's subsumption theory of learning in the context of children's use of the causal and logical connectives. Lawton (1977) predicted that, "the acquisition of prior cognitive structure organizers would (a) facilitate the learning and retention of subsequently presented concepts and logical operations, and (b) lead to a diminution of syncretic reasoning and understanding (as described by Piaget)" (p. 41).
Lawton (1977) used six and ten year olds in his study. The experimental groups received advance organizer lessons, representing both subject-matter concepts and concepts of hierarchical classification. These were contrasted with introductory lessons, which presented learning material at the same level of generality as subsequent information to a control group. According to Lawton (1977), "A twice repeated pre-test/posttest assessment indicated both an acceleration and facilitation effect from the advance organizer lessons" (p. 41).

The study conducted by Delany, Kinnucan, and Tyler (1983) focused on the nature of individual differences in reading comprehension. Delany, Kinnucan, and Tyler (1983) suggested that encoding efficiency and organizational ability are the two probable factors which are the source of individual differences. The study employed two experiments. The second experiment was designed to reduce a possible source of poor readers' comprehension deficit, namely, inadequate organizational ability. To achieve this end, the advance organizer was employed. The Kintsch and VanDijk model and the sorting task were used "to localize the effects of advance organizers and to determine the extent to which those effects depend on reading ability of the individual involved" (p. 364). The second aim was to
"optimize the comprehension of readers, especially those of lesser ability, through the use of the advance organizer" (p. 364).

It was found that good readers usually showed greater recall of detail when given either type of advance organizer. Good readers are more adept in their ability to abstract both detailed information and more general information. It was also found that advance organizers are of some benefit, but the facilitating effect for poor readers was not as pronounced here as predicted. There was, however, a suggestion that simple summaries are not as effective as advance organizers in facilitating prose comprehension and retention.

These results led to a third experiment which was designed to construct and test an advance organizer that would be more beneficial to the poor reader than the traditional organizer had been. A new organizer was developed to provide subjects with the necessary ideal schema for interpreting scientific reports. The organizer was also translated from prose to diagrammatic form. Three major conclusions were drawn by the investigators as a result of the third experiment. They concluded that high ability readers were shown to be superior in their recall of detailed information and were also better able to organize the abstracted information. Secondly, poorer readers were assisted by the advance organizers used in
Experiment 3 whether in paragraph or diagram format. And finally, they concluded that there was not the anticipated advantage of the diagram organizer over the prose organizer for low ability subjects. In general, the researchers found the advance organizer to be a useful text adjunct. Poor readers seemed to profit in enhanced recall of detail when the advance organizer gave them, according to the researchers, "a plan for organizing the subsequent information and for assessing its relative importance" (p. 371).

Advance organizers have been constructed in forms other than the traditional narrative prose or the diagram as employed by Delany, Kinnucan, and Tyler (1983). Scandura and Wells (1967) compared the use of an advance organizer in the form of a game with an historical introduction. The purpose of the game was to introduce the structure of a mathematical group in terms familiar to the subjects. The investigators reported that the organizer was superior to the historical introduction (p < .05). Instructional time, however, was not held constant for the two groups.

Although many studies reported facilitative effects of advance organizers, many studies did not support Ausubel's theory. Schulz (1966) studied the effectiveness of advance organizers on a group of sixth-grade students of above average
ability. The subject matter was science, and the treatment lasted 20 weeks. The first advance organizer was provided at the beginning of the study and the second 12 weeks later. No significant difference was found on the posttest or the delayed posttest between the two advance organizer groups and a control group. One possible explanation may be that the organizers were spaced too far apart to be a fair test of significance.

Jerrolds (1967) compared the use of an advance organizer and a modified advance organizer using 84 ninth grade students. A control group received no organizer. Jerrolds (1967) found no significant difference among any subgroups in the sample.

Livingston (1970) conducted three experiments with advance organizers. One was with a high school class and two were with eighth-grade classes. He used a simulation game as an advance organizer to teach economic geography. In each of his experiments, the control group scored higher, but not significantly higher, than the experimental group.

Barnes (1973), using 12 sixth-grade classes, studied the effects of advance organizers. His study lasted five weeks. He reported no significant difference between the group using advance organizers and the control group.

Lucas (1972) tested the effects of three types of advance
organizers: written, visual, and audio. His subjects consisted of 196 seventh-grade science students. His study lasted for four weeks. He found no significant differences in favor of any type of organizer.

Woodward (1966), using 27 college students, compared the effects of both advance organizers and post organizers. He found no significant differences between the groups.

Although many studies do not report any significance, the practical significance of the advance organizer cannot be ignored. Barnes and Clawson (1975) state,

As applied to advance organizer research, the textbook author or publisher and the teacher need to decide if any increase in achievement of students who are presented with advance organizers over those who do not receive them is sufficient to warrant using advance organizers. (pp. 652 & 653)

**Language Experience Approach**

Student involvement in the construction of learning materials is not a new concept. A great deal of pedagogical practice revolves around the language experience approach to reading. This approach uses the students' own language as a basis for reading material. Meagher (1980) outlines some necessary teacher attitudes when using the language experience approach.

1. The teacher must accept the child's language as it is.
2. The teacher must come to the teaching situation open-minded about the skill areas to be developed.

3. The teacher must expand upon the creative nature of language itself.

4. The teacher must recognize the nature of reading and its relation to total language learning.

The student profile throughout the research related to the language experience approach applied to teaching at the secondary level tended to be fairly consistent. The language experience approach, which emphasizes the student's experiences and oral language, seems to be most suitable for low achievers. Handel (1976) conducted an alternative language arts program with a group which included diagnosed dyslexics and others who had varying degrees of difficulty with organization and perceptual receptivity. Some students in Handel's study exhibited behavioral problems which interfered with learning. Calvert (1973) worked with grades seven and ten Mexican American remedial reading students. Mallett (1977) worked with adolescent Native Indian remedial readers. Kennedy and Roeder (1975) used the language experience approach with illiterate adult learners.

In all studies, the language experience approach seemed to be well suited for remedial readers. Hall (1981) noted, "The view of reading as processing of ideas as presented in written
Monteith (1976) suggests the language experience approach as a solution to the scarcity of beginning reading materials for older students. Using the language experience approach, the students may write their own beginning material. Monteith (1976) cited Spache's three reasons for using the language experience approach. First, the range of year end reading scores is greater when using the language experience approach with underprivileged children. In the second place, the realization that reading is a form of talk written down results in more fluent, natural reading. Finally, the approach fosters more frequent and more varied teacher, pupil contacts, with inherent possibilities of mutual understanding. All of these observations can be applied to older students.

Mulligan (1974) suggested, "rather than accepting students as remedial cases, it is possible for teachers of reading who work at the high school level to adapt certain methods intended primarily for beginning readers to their own situations" (p. 211).

Johnson (cited in Hall, 1987) states five fundamental principles of learning that underlie working with remedial readers.

1. Learning begins with the known.
2. Learning proceeds from concrete to abstract.
3. Learning demands active participation.
4. Learning should be goal directed.
5. Learning is an individual matter. (p. 28)
Because middle and high school students are developing more mature tastes and interests, they tend to resent juvenile literature. The language experience approach can be a solution to the scarcity of beginning reading materials for older students.

Although most researchers do not prescribe a strict adherence to pure language experience methodology, they do suggest a common procedure to be used when adapting the language experience approach to high school students (Cohn, 1981; Handel, 1976; Kennedy and Roeder, 1975; Mallett, 1977; Meagher, 1980; Rusnak, 1980).

Most of the language experience related approaches began each lesson with a stimulus. The stimulus, most always provided by the teacher, could be a picture, movie, field trip, or an oral reading. A class discussion generally followed the stimulus as the primary emphasis was on communication and self expression. The class discussion, or oral communication, led to written communication. At this point, the teacher wrote and duplicated student dictated stories, plays, et cetera. The students' work then became the reading material for the entire class. Students were then encouraged to discuss their work.

Naturally, each researcher had to adapt this basic procedure
to fulfill the needs and purposes of his/her own study. Regardless of the method employed, most researchers found significant gains in several areas after using a language experience related approach with their students.

Perhaps the area which reported the most gain was the effective area. Cohn (1981) notes that if the reader can see a relevance for what is being read and has a background of experiences to aid in understanding the material, then the reader's attitude may be more positive.

Kennedy and Roeder (1975) observed that the adult learner comes to the reading situation with a history of negative school experiences, feelings of failure, and emotional blocks to learning. These researchers note, "Language experience provides a process which allows students to deal with these problems head on" (p. 5).

In her study with grades five and ten inner city Black students, Stocker (1970) found the language experience approach bridged the cultural gap and promoted self expression. Mallett's (1977) study with adolescent remedial readers indicated that students taught with the language experience approach made greater gains in writing and attitude and equal gains in vocabulary and comprehension when compared to a control group in a traditional reading laboratory.
Reading Comprehension

Kallert (1977) used the Gates-MacGinitie Reading Test, Survey E, Forms 1, 2, and 3 (1965) to measure vocabulary and comprehension gains. The t-unit formula was applied to students' writing achievement gains. Attitude gains were measured by the Estes Scale to Measure Attitude Towards Reading (1971).

The statistical analysis of the data resulted in no statistically significant differences in vocabulary or comprehension between the language experience approach and the typical reading laboratory approach within the same students. Writing achievement gains and improvements in attitude, however, were significant (at the .05 and .01 level of confidence respectively) for the language experience approach when compared with the typical reading laboratory approaches with the same students.

Along with gains in attitude and motivation, the language experience approach also lends itself to gains in comprehension and writing skills. Meagher (1980) points out that the language experience approach starts from comprehension. The learning environment encourages the student to retrieve previous knowledge in light of the current challenge. The emphasis on discussion and listening allows the student a time to apply previous experiences to new concepts. The individual conference
Reading Comprehension

provides necessary direct instruction in reading and writing skills in which the students may be deficient.

Mallett (1977) researched the language experience approach with remedial reading classes. In three of his six classes, he employed the language experience approach to develop materials. In the other three classes, a diagnostic-prescriptive approach was employed. There were no significant differences (at the .05 level of confidence) in vocabulary gains or in comprehension between the two groups. The data did, however, show that writing achievement gains and improvements in attitude toward reading were greater (at the .05 and .01 level of confidence respectively) for the language experience approach group than for the diagnostic-prescriptive approach.

The studies which have incorporated the language experience approach and related approaches into the secondary curriculum cite a need for further research in the area. Few studies have been conducted using the language experience approach with secondary school students.

Vocabulary

Although authorities in reading recognize the need for vocabulary development, little research has investigated the relationship between learning word meanings and reading comprehension. The nature of the relationship between vocabulary
knowledge and reading comprehension is poorly understood. Anderson and Freebody (1979) suggested several hypotheses which might account for this relationship. The "instrumentalist hypothesis" poses a direct, causal link between vocabulary knowledge and comprehension, such that "knowing the words enables text comprehension" (p. 7). Spache and Spache (1973) state, "it is sufficient to say that comprehension is significantly promoted by attention to vocabulary growth" (p. 78).

Anderson and Freebody (1979), note that in order to prove a relationship between knowing the meaning of individual words and reading comprehension, it would need to be shown that the substitution of easier words for difficult words makes the text easier to comprehend and that people are helped to comprehend a text when they learn the meanings of difficult words.

Pany, Jenkins, and Schreck (1982) conducted three experiments to assess the effects of vocabulary instruction on word knowledge and reading comprehension. In Experiment 1, the subjects were 'average' fourth grade students. In Experiments 2 and 3, the subjects were learning disabled and remedial readers. The results of Experiments 1 and 2 indicated that more meanings were acquired as a result of increased
direct instruction. The third experiment indicated vocabulary training to be effective in the comprehension of single sentences; however, on two of three measures of passage comprehension, no effects were observed that were attributable to vocabulary instruction. The students, therefore, did not seem to benefit from their vocabulary knowledge advantage when they read connected discourse. Pany, Jenkins, and Schreck (1982) suggest that "the increased task demands involved in comprehending connected discourse require greater vocabulary facility than that produced by instructional procedures employed in the present study" (p. 214). They also state, "The presumed importance of vocabulary knowledge may have been somewhat overestimated. Perhaps readers can tolerate an unexpectedly high proportion of unfamiliar words without suffering comprehension losses" (p. 214).

Anderson and Freebody (1983) conducted two experiments to determine the effects of text cohesion and schema availability on comprehension of social studies passages that varied in vocabulary difficulty. The measures employed were free recall, summarization, and sentence verification. The tests in Experiment 1 varied in cohesion. No interactions between cohesion and vocabulary were found. In Experiment 2, schema availability was manipulated by varying topic familiarity. Significant effects for vocabulary and familiarity were found.
The two factors, however, did not interact. The two experiments failed to support the interactive theory of reading which states, according to Anderson and Freebody (1983),

reading involves many complementary levels of analysis. A satisfactory understanding of a particular element in a text depends, not only on accurate identification of words, but also a knowledge of syntax, analysis of connections between this element and other parts of the text, and prior knowledge of the topic. (p. 278)

Anderson and Freebody (1983) suggest the possibility that, "it takes a surprisingly high proportion of difficult vocabulary to produce reliable decrements in comprehension measures" (p. 293).

In addition, they suggest, "that it is probably a mistake to interpret the high correlations always seen in vocabulary tests and tests of reading proficiency indicating that word knowledge is of overriding instrumental importance in text comprehension" (p. 293).

Carnine, Freschi, and Kameenui (1982) conducted two experiments to determine the following comprehension issues:

1) whether substituting difficult words for easy words in a text make that text more difficult to comprehend,
2) whether learning the meanings of the difficult words facilitates text comprehension, 3) whether embedding redundant information specific to difficult vocabulary words significantly contributes to text comprehension, and 4) whether a passage integration vocabulary training strategy is more effective than a vocabulary training strategy that does not include passage integration. (p. 367)

The measures employed were multiple choice tests and retell
scores. In both experiments, substituting easier for more difficult vocabulary words made the text easier to comprehend and redundant information in a text significantly contributed to text comprehension. Instruction of difficult vocabulary words also facilitated comprehension in both experiments. The children who received passage integration received higher scores than those who did not receive integration training. The superior performance on inferential comprehension of students in the redundant information group in both studies "suggests a possible alternative explanation for the negligible effects of vocabulary training on overall reading comprehension as reported by Pany, Jenkins, and Schreck (1978)" (p. 386).

In discussing the effects of vocabulary instruction on reading comprehension, the area of teaching strategies cannot be overlooked. Brause and Mayher (1983) addressed the issue of vocabulary instruction strategies in an interview with Levine, a teacher in an urban alternative program for students in grades six through eight. Levine stressed the importance of students understanding the concepts which are related to subject-specific vocabulary. Levine also stressed the importance of familiarity which evolves through personal, concrete experiences with a particular concept. Levine conducted an informal study which investigated the relationship between the frequency of
vocabulary words employed in class instruction and the frequency of the same words in student writing. Levine (as cited in Brause and Mayher, 1983) reported, "These findings suggest the intimate relationship between the frequency of use of terms in concrete contexts and their meaningful use in writing" (p. 1011).

Levine (as cited in Brause and Mayher, 1983), was unsure if vocabulary usage alone can be equated with understanding of the concept. She also observed that students understood the terms more fully with time, as when they "presented analogies between the terms and their experiences" (p. 1011).

Research in the area of vocabulary instruction may have implications for instructional practices. Pany, Jenkins, and Schrack (1982) note, "Often, teachers devote time to introducing new vocabulary prior to assigning a reading selection. If the primary intent of this practice is to facilitate student comprehension of the forthcoming selection, there may be cause to reexamine this assumption" (p. 214).

**Summary of the Chapter**

In an effort to improve reading comprehension, various pedagogical strategies need to be evaluated. As a facilitator of meaning, the teacher must understand and evaluate the various strategies available.
Because reading is a dynamic interaction among the author, the text, and the reader, a considerable amount of instruction should center on preparing the reader to encounter the text. One such method of preparation is the advance organizer. A great many studies have been conducted on the effectiveness of the advance organizer. Although the research has produced mixed results, the practical significance of the advance organizer warrants the attention of educators as an effective teaching aid.

Little research has been conducted employing the language experience approach to reading with secondary school students. The existing research does not attempt to employ a strict adherence to the language experience approach but rather adapts the language experience approach to meet the needs of older students.

Little attention in the area of research has been given to the relationship between vocabulary development and reading comprehension. Many researchers have found, however, that concept development is more important than vocabulary development when related to reading comprehension.

In order to increase reading comprehension, the teacher must determine which practices offer the most effective results.
This study will attempt to determine the effectiveness of the language experience approach as compared to the effectiveness of a teacher structured vocabulary approach as prereading activities.
Chapter III

Design of the Study

**Purpose**

The purpose of this study was to investigate the effectiveness of a language experience approach advance organizer when used as a prereading activity compared to the effectiveness of a teacher structured vocabulary organizer when used as a prereading activity.

**Questions**

1. Is there a statistically significant difference between the language experience approach advance organizer group and the teacher structured vocabulary organizer group in reading comprehension as measured by a test of retention?

2. Is there a statistically significant difference between the language experience approach advance organizer group and the teacher structured vocabulary organizer group in reading comprehension as measured by a delayed posttest of retention?

**Methodology**

**Subjects**

The subjects involved in this study were tenth grade
language arts students attending a suburban high school in Western New York State.

The language experience approach advance organizer group consisted of 20 tenth grade language arts students. The teacher structured vocabulary organizer group consisted of 20 tenth grade language arts students. There were four separate classes involved in the study.

The language experience approach advance organizer group consisted of one group from teacher A and one group from teacher B. The teacher structured vocabulary organizer group also consisted of one group from teacher A and one group from teacher B.

The two groups were equated in terms of reading comprehension based on their scores on the Test of Achievement and Proficiency, Form T. There was no significant difference between the groups for reading comprehension scores. The reading comprehension data were taken in the spring of 1985.

**Instruments**

A posttest and a delayed posttest of the reading passages were developed by the researcher (see Appendix A). Each test contained the same 50 multiple choice factual and inferential
questions pertaining to the passages read by the students.

The tests used were tested for reliability by both the split-half reliability test (see Appendix B) and the test-retest reliability (see Appendix C). Using a split-half reliability with 25 samples, a coefficient greater than .396 was needed to establish correlation at the .05 level of significance. The r-value attained was 0.693. It can therefore be assumed that at the .05 level of significance, the tests used were reliable by using the split-half reliability procedure. This procedure established the consistency of test scores due to the content of test items.

In order to establish the consistency of test scores over a period of time, a test-retest reliability procedure was employed. The r-value needed to establish significance at the .05 level was 0.396. The value attained was 0.969 (see Appendix C). It can therefore be assumed that at the .05 level of significance that the tests were reliable by using the test-retest reliability procedure.

**Procedures**

Five reading passages (see Appendix D) were selected by the researcher on the basis of their readability and content. Each passage was identified at either grade 7 or grade 8 readability according to the Fry readability formula.
The treatment was divided into five lessons, each centering on a particular reading passage. The students received the treatment during their regular language arts class which met each day for forty minutes.

The language experience advance organizer group received an oral stimulus provided by the teacher in advance of reading each passage. The teacher posed certain questions to the students about the general subject matter of the reading passage. The teacher did not, however, address the particular subject matter of the reading passage. The questions asked by the teacher were posed at a higher level of abstraction and generality than the reading material itself. The students, in turn, would respond to the teacher's questions verbally. Examples of the discussion questions can be found in Appendix E.

Following the class discussion, the students were directed to write one paragraph about the general content of the discussion and relate the content to their own experience.

The teacher structured vocabulary organizer group received five to ten vocabulary words in advance of each reading passage. These vocabulary words can be found in Appendix F. Each word was discussed and defined in class. After copying the correct definition for each word, the students were instructed
to write each word in a sentence. All writing was collected and reviewed by the teacher.

As students from either group finished their writing assignments, they were given the reading passage and instructed to read it. When students finished reading, they were given 10 multiple choice questions to complete without referring back to the passage. All materials were collected by the teacher before the students took the quiz.

The scores from the five quizzes were combined into one unit test score. The delayed posttest was administered 10 days after the completion of the treatment.

Statistical Analysis

A series of t tests was used to test the two questions at the .05 level of significance.

Summary

The effectiveness of a language experience approach advance organizer when used as a prereading activity was compared to the effectiveness of a teacher structured vocabulary organizer as a prereading activity. Reading comprehension was measured by both a posttest and a delayed posttest. The scores were compared by using a series of t tests at the .05 level of significance.
Chapter IV

Analysis of Data

Purpose

The purpose of this investigation was to assess the effectiveness of a language experience approach advance organizer when used as a prereading activity compared to the effectiveness of a teacher structured vocabulary organizer when used as a prereading activity.

Findings and Interpretations

The following questions were investigated:

1. Is there a statistically significant difference between the language experience approach advance organizer group and the teacher structured vocabulary organizer group in reading comprehension as measured by a test of retention?

2. Is there a statistically significant difference between the language experience approach advance organizer group and the teacher structured vocabulary organizer group in reading comprehension as measured by a delayed posttest of retention?

The first question was to determine whether there was a significant difference between the language experience approach advance organizer group and the teacher structured vocabulary organizer group in the comprehension of five reading passages.
A *t* test was used to test the hypothesis at the .05 level of significance. Table 1 provides the data from the statistical analysis.

**Table 1**

* A *t* test for Independent Measures of Significant Difference on a Posttest

<table>
<thead>
<tr>
<th>Group</th>
<th>d.f.</th>
<th>( \bar{X} )</th>
<th>S</th>
<th>( t )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Experience</td>
<td>38</td>
<td>62.1</td>
<td>10.94</td>
<td>0.84</td>
</tr>
<tr>
<td>Advance Organizer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teacher Structured</td>
<td>38</td>
<td>59.2</td>
<td>10.78</td>
<td>0.84</td>
</tr>
<tr>
<td>Vocabulary Organizer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The calculated *t* value between the posttest scores (see Appendix G) was 0.84. For a *t* test for independent measures at the .05 level of significance, the critical value for 38 degrees of freedom is 2.02. Since the calculated *t* value (0.84) was less than the critical *t* value (2.02), the probability \( p < .05 \) was more than a 5% chance that the difference of the means occurred by chance.

The analysis of data indicates that there is not a significant difference in favoring one group over the other in comprehension as measured by a posttest.

Question two sought to determine if there was a difference
between the language experience approach advance organizer group and the teacher structured vocabulary organizer group in the retention of information as measured by a delayed posttest. A $t$ test was used to test the hypothesis at the .05 level of significance. Table 2 provides the data from the statistical analysis.

Table 2

A $t$ test for Independent Measures of Significant Difference on a Delayed Posttest

<table>
<thead>
<tr>
<th>Group</th>
<th>d.f.</th>
<th>$\bar{X}$</th>
<th>$S$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
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<td>Language Experience</td>
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<td>52.75</td>
<td>11.82</td>
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<tr>
<td>Teacher Structured</td>
<td>38</td>
<td>47.7</td>
<td>11.66</td>
<td>1.36</td>
</tr>
<tr>
<td>Vocabulary Organizer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. $d.f. = n_1 + n_2 - 2$

The calculated $t$ value for the delayed posttest scores (see Appendix H) was 1.36. For a test of independent measures at the .05 level of significance the critical value for 38 degrees of freedom is 2.02. Since the calculated $t$ value (1.36)
Reading Comprehension

was less than the critical t value (2.02), the associated probability (p < .05) was more than a 5% chance that the difference was due to chance.

**Summary**

An analysis of the data from this study indicates that there is no statistically significant difference favoring the language experience advance organizer group as compared to the teacher structured vocabulary organizer group in comprehension as measured by a posttest and delayed posttest of reading comprehension. Although there was a difference between the means, the difference was due to chance.
Chapter V

Conclusions and Implications

Purpose

The purpose of this study was to investigate the effectiveness of a language experience approach advance organizer when used as a prereading activity as compared to a teacher structured vocabulary organizer as a prereading activity as measured by a posttest and a delayed posttest of retention.

Conclusions

Although the mean for the language experience organizer group was slightly higher than the group mean for the teacher structured vocabulary organizer on both the posttest and the delayed posttest, the difference was due to chance.

It is therefore reasonable to conclude that the language experience approach advance organizer facilitates reading comprehension equally as well as a teacher structured vocabulary organizer for both immediate and delayed comprehension.

Although the differences in the means between the two groups were not statistically significant, the means were slightly higher for the language experience approach advance organizer than for the teacher structured vocabulary organizer group in each experiment. These findings are consistent with the
findings of Mallett (1977) where students taught with the language experience approach made greater gains in writing and attitude and equal gains in vocabulary and comprehension when compared to a control group in a traditional reading laboratory.

The findings of the current study also support the conclusions of Anderson and Freebody (1983). From their study, they determined that reading consists of many complementary levels of analysis. The understanding of a particular text, according to Anderson and Freebody (1983), depends only partially on an accurate identification of words.

Although the current study did not find statistically significant differences in comprehension between the two groups, certain informal observations were noted by both teachers. Both teachers acknowledged a marked difference in attitude favoring the language experience approach advance organizer group over the teacher structured vocabulary group. Those students involved in the language experience approach advance organizer group enjoyed bringing their background and experience to class discussions. The student involvement noted in this study is supported by Johnson (1977) when he cites one of the five fundamental principles of learning to
be active participation.

This study demonstrated that the language experience approach advance organizer facilitated the comprehension of reading passages equally as well as the teacher structured vocabulary organizer.

Implications for Future Research

This section is divided into two categories, the expansion and refinement of this study and recommendations for future research.

Expansion and Refinement of the Present Study

A larger sample would be advantageous if this study were replicated. A cross section including all types of readers would also be advantageous. The students involved in the present study were restricted to below-grade level readers. Such students are often low achievers due to a number of factors, including negative attitudes toward reading. This alone may have affected their performance.

Recommendations for Future Research

Future researchers could consider some of the following questions:

1. Is the language experience approach effective in
teaching remedial reading at a secondary level?

2. Is the language experience approach effective in teaching writing at the secondary level?

3. Is the language experience approach effective in improving attitude toward reading at the secondary level?

**Classroom Implications**

On the basis of the results of this study, the language experience approach advance organizer is equally as useful as the teacher structured vocabulary organizer in promoting reading comprehension.

The language experience advance organizer also promotes classroom discussion, student interest, and student writing. Each teacher should weigh the effects of both approaches and determine pre-reading activities accordingly.

Perhaps a combination of both approaches would not only promote comprehension but would facilitate concept formation as well.

The teacher must bear in mind, however, that vocabulary instruction alone does not promote reading comprehension more than other pre-reading activities.

**Summary**

This study demonstrated the effectiveness of the language
Reading Comprehension

experience approach advance organizer and the teacher structured vocabulary organizer. Both methods were shown to promote reading comprehension equally.
References


Appendix A

Posttest Questions
Multiple Choice Questions for "Six Keys to Quicker Learning"

1. Which is a common misconception (false idea) among people?
   A. People are stupid unless they receive an education.
   B. An individual's ability to learn is a fixed capacity.
   C. Experience helps people read better.
   D. All of the above.

2. When reading unfamiliar material, you should
   A. not plunge directly into it.
   B. not underestimate your capacity to read.
   C. ask someone what it is about.
   D. plunge directly into it.

3. What technique may help anchor in your mind what you are about to read?
   A. mnemonics.
   B. speed reading.
   C. scanning.
   D. none of the above.

4. Speed reading
   A. is never effective.
   B. can only be learned by geniuses.
   C. can be learned easily.
   D. is fine for easy material

5. Good learners
   A. vocalize, or voice the material being learned.
   B. automatically re-read when they're stumped.
   C. become "actively involved" with new information.
   D. all of the above.

6. Which is an example of a mnemonic?
   A. vocalizing.
   B. "A rat in Tom's house may eat Tom's ice cream."
   C. outlining.
   D. all of the above.
Reading Comprehension

("Six Keys to Quicker Learning")

7. What is the secret of developing a good memory?
   A. having a high I.Q.
   B. paying attention when learning new material.
   C. transferring information to your long term memory.
   D. developing efficient short term memory.

8. What would be the best way to memorize 112 words?
   A. organize them into categories.
   B. use mnemonic sentences.
   C. make an image of them in your mind.
   D. study for hours.

9. According to the article,
   A. most people waste too much time when studying.
   B. everyone can improve their ability to learn.
   C. everyone should study in a quiet place.
   D. all of the above.

10. The tone of this article was
    A. educational.
    B. humorous.
    C. pessimistic.
    D. discouraging.
Multiple Choice Questions for "The Mysteries of America's 'Ancient Ones'"

1. What name means "The ancient ones"?
   A. Navajo
   B. Anasazi
   C. Chaco
   D. Pueblo

2. What was Pueblo Bonito?
   A. an Indian tribe which disappeared in the 13th century.
   B. a canyon 15 miles long and one mile wide.
   C. a five-story structure with 800 rooms.
   D. a little city of multistoried dwellings.

3. In the matriarchal Anasazi society,
   A. women would have been merely slaves.
   B. men would have been the undisputed heads of the household.
   C. women would have taken care of the fields and cattle.
   D. men would have been mere boarders in their wives' homes.

4. When the Anasazi grew old,
   A. they were taken care of by the young.
   B. they were considered a burden.
   C. they went off to die alone.
   D. they lived in a special home.

5. The Anasazi were able to survive because of
   A. their strong family ties.
   B. their skill at fighting.
   C. their mastery of irrigation.
   D. their masterful artwork.

6. The Anasazi were not
   A. skilled astronomers.
   B. skilled farmers.
   C. active traders.
   D. skilled warriors.
Reading Comprehension

("The Mysteries of America's 'Ancient Ones' ")

7. In exchange for such things as copper bells and seashells, the Chacoans offered
   A. dried buffalo meat.
   B. raw cotton.
   C. turquoise.
   D. corn.

8. What may have caused the Anasazi to feud among themselves?
   A. rights to silver mines.
   B. a collapse in their government.
   C. drought.
   D. influence of the white man.

9. The life of the Anasazi could best be described as
   A. peaceful and rich.
   B. hectic and backward.
   C. quiet and lazy.
   D. secluded and poor.

10. The Anasazi are perhaps best known for their
    A. magnificent jewelry.
    B. geometrically designed pottery.
    C. advanced architecture.
    D. contribution to the written language.
Reading Comprehension

Multiple Choice Questions for "The Trouble With Television"

1. According to the statistical averages, by the age of 26, you will have been exposed to at least how many hours of television?
   A. 2,000
   B. 20,000
   C. 12,000
   D. 10,000

2. The trouble with television is that it
   A. ruins your eyes.
   B. discourages concentration.
   C. promotes violence.
   D. has too many sexually explicit shows in the daytime.

3. Programmers live in constant fear of
   A. the network executives.
   B. being censored.
   C. losing anyone's attention.
   D. not meeting their deadlines.

4. According to this article, what crisis is currently facing America?
   A. the number of illiterate Americans.
   B. the decline of educational television.
   C. the lack of censorship on television.
   D. the number of children watching Saturday morning cartoons.

5. According to this article, which aspect of American life has become less complex?
   A. forms of family organization.
   B. its dominating communications instrument.
   C. its economy.
   D. the structure of society.
Reading Comprehension

("The Trouble With Television")

6. What is the surest way for a television program to capture and hold your attention?
   A. keep everything brief.
   B. not strain your attention.
   C. provide constant stimulation.
   D. All of the above.

7. What could be gained by spending 5,000 hours at something more useful than watching TV?
   A. a college degree.
   B. a degree in medicine.
   C. you could have walked twice around the world.
   D. all of the above.

8. The author's tone could best be described as
   A. critical.
   B. amusing.
   C. discouraged.
   D. satirical.

9. The author's purpose would appear to have been
   A. to discourage people from watching television.
   B. to encourage television programmers to air more educational programs.
   C. to encourage people to reevaluate the time they spend watching television.
   D. to encourage people to read instead of watching TV.

10. How does the author support his point?
    A. by pointing out certain facts and examples.
    B. by repeating the same point in different ways.
    C. through humor.
    D. by shocking the reader.
Multiple Choice Questions for "Stress: It's Not Worth Dying For"

1. How many people stricken with heart disease have no classic risk factors?
   A. 75%
   B. 50%
   C. 25%
   D. 10%

2. What is termed the "missing trigger"?
   A. cholesterol.
   B. lack of exercise.
   C. moderate stress.
   D. unbearable stress.

3. Why would more sudden deaths at NASA occur after a new space shot than at any other time?
   A. budgets would be slashed.
   B. the stress of the lift off was unbearable.
   C. tremendous stress is exerted upon astronauts in space.
   D. many NASA employees become "workaholics".

4. What reaction is not a result of the sudden release of adrenalin?
   A. increased heart rate.
   B. higher blood pressure.
   C. blood rushes to the muscles.
   D. breathing becomes faster.

5. Stress is also believed to cause
   A. cancer.
   B. higher cholesterol levels.
   C. migraine headaches.
   D. nose bleeds.

6. Which man would most likely be an example of a "Type A" personality?
(

"Stress: It's Not Worth Dying For"

7. Too much stress is usually a result of
A. too many emotional upsets spaced too closely together.
B. a mismatch between your expectations and your environment.
C. too many pressures at work.
D. lack of the ability to think and act quickly.

8. This article recommends exercising for 20 minutes at 75% of your maximum predicted heart rate
A. 5 times a week.
B. 2 times a week.
C. everyday.
D. 3 times a week.

9. Which is not a way to cope with stress as recommended in this article?
A. avoid those things you neither have to or want to do.
B. eat more when you are nervous.
C. learn not to overreact emotionally.
D. stop smoking.

10. The main idea of this article is
A. "People who overreact are likely to have heartattacks."
B. "Americans do not take enough time to relax."
C. "Stress can cause more trouble than it's worth."
D. "Stress is difficult to measure."
Multiple Choice Questions for "Emotional Child Abuse"

1. (True or False) Emotional child abuse is harmful, but not as harmful as physical child abuse.

2. Emotional child abusers are prompted by
   A. a child's misbehavior.
   B. alcohol.
   C. their own psychological problems.
   D. their lack of experience with problem children.

3. Emotional child abuse is a problem
   A. affecting a small portion of society.
   B. limited mostly to the lower class segment of society.
   C. affecting many children.
   D. very hard to detect.

4. Emotional child abuse is a systematic destruction of
   A. close family ties.
   B. a child's self-esteem.
   C. the child's love for his parents.
   D. a parent's love for his/her child.

5. An example of "emotional unavailability" would be
   A. being out of town on a business trip when your child gets hurt.
   B. overreacting to your child's bad report card.
   C. ignoring your child's accomplishments.
   D. acting ashamed of your child when he fails at something which you think is important.

6. The term "emotional depreciation" would best apply to
   A. scolding a child for not sharing his toys with a friend.
   B. being disappointed over a report card with all B's instead of all A's.
   C. ignoring certain milestones in a child's life such as his first step.
   D. not allowing a child to break away from the nest by terrifying him of the outside world.
Reading Comprehension

7. The term "emotional domination" would best apply to
   A. scolding a child for not sharing his toys with a friend.
   B. being disappointed over a report card with all B's instead of all A's.
   C. ignoring certain milestones in a child's life such as his first step.
   D. not allowing a child to break away from the nest by terrifying him of the outside world.

8. Other adults who witness emotional child abuse should
   A. ignore it so as not to embarrass the child even more.
   B. mind their own business because they really cannot help that child.
   C. contact the proper authorities for child abuse.
   D. say something positive about the child in front of the child.

9. Most emotional child abusers
   A. have little education.
   B. come from low income families.
   C. received inadequate love from their own parents.
   D. were physically abused as children and want to avoid beating their children.

10. Children who have been emotionally abused
    A. may never recognize it until they are adults.
    B. will probably always hate their parents.
    C. can never really feel valuable as people.
    D. will probably abuse their own children.
Appendix B

Split-Half Reliability Test
<table>
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<tr>
<th>Student</th>
<th>Incorrect Test Items #s 1,3,5,8,10</th>
<th>Incorrect Test Items #s 2,4,6,7,9</th>
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</thead>
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<td>1.</td>
<td>6</td>
<td>7</td>
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<td>2.</td>
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<td>7.</td>
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Reading Comprehension
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Appendix D

Reading Passages
Your memory's a sieve?
Your mind wanders?
Don't despair.
Here are...

SIX KEYS TO QUICKER LEARNING

BY PATRICIA SKALKA

A FRIEND OF MINE was at a dinner party where two men she knew were discussing The Right Stuff, a book about the Mercury space program. When Ted went on and on about the technical details he had picked up from the book, Dan offered only a few tentative comments. "Ted got so much more out of the reading than I did," Dan later told his friend. "Is he much smarter than I am?"

My friend, an educator, was curious. She knew the two men had similar educational backgrounds and intelligence levels. She talked with each and discovered the answer: Ted just knew how to learn better than Dan did. Ted had made his brain more absorbent by using a few simple skills.

For years, experts had believed that an individual's ability to learn was a fixed capacity. During the last two decades, however, leading psychologists and educators have come to think otherwise. "We have increasing proof that human intelligence is expandable," says Jack Lochhead, director of the Cognitive Development Project at the University of Massachusetts at Amherst. "We know that with proper skills people can actually improve their learning ability."

Moreover, these skills are basic enough so that almost anyone can master them with practice. Here, gathered from the ideas of experts across the country, are six proven ways to boost your learning ability.

1. Look at the big picture first. When reading new, unfamiliar material, do not plunge directly into it. You can increase your comprehension and retention if you scan the material first. Slim subheads, photo captions and any available summa-

Readers' Digest, February, 1965

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Once dismissed by researchers as a mere gimmick, mnemonics are now considered an effective means of boosting memory—doubling or even tripling the amount of new material that text subjects can retain. "A good memory is the key to all cognitive processes," according to William G. Chase, professor of psychology at Carnegie-Mellon University in Pittsburgh. "And it is something we can all have with practice."

Cognitive research shows that we have two kinds of memory: short-term and long-term. Short-term memory (STM) lasts for about 30 to 60 seconds. We call directory assistance for a phone number, dial the number and then forget it. Long-term memory (LTM), however, can last a lifetime. The secret to developing a good memory, says Francis S. Beightler, professor of Education and Memory Skills, is learning how to transfer useful information from STM to LTM and how to retrieve that information when needed.

Mnemonics can be the key that pulls data into STM and puts the information back out again. Remember, the mind and memory are like muscles—the more you use them, the stronger they get.

1. Organize facts into categories. In studies at Stanford University, students were asked to memorize 112 words. These included names of animals, items of clothing, types of transportation, and occupations. For one group, the words were divided into these four categories. For a second group, the words were listed at random. Those who studied the material in organized categories consistently outperformed the others, recalling two to three times more words.

"Trying to digest new information in one jump is difficult," says Thomas R. Trabasso, professor of education and behavioral science at the University of Chicago. "By analyzing new material and dividing it into meaningful chunks, you make learning easier."

For example, to remember the names of all 39 former U.S. Presidents in proper order, cluster the names into groups—those before the War of 1812, those from 1812 until the Civil War, those from the Civil War to World War I, and those after World War I. By thus organizing complex material into logical categories you create a permanent storage technique.

5. Focus your attention. The next time you are faced with new material you need to master, ask yourself, "What do I learn from reading this, and how will I benefit from the knowledge gained?" By telling ourselves what the learning will do for us, we reduce our resistance to studying and become better learners," says Russell W. Scalpione, a psychologist and manager at A. T. Kearney, Inc., an international management consulting firm.

Scalpione recommends four other techniques for improving concentration and focus:

- Establish a time and a place for learning. Take the phone off the hook; close the door. By regulating your environment, you create the expectation that learning will occur.
- Guard against distractions. Don't be shy about hanging a "Do Not Disturb" sign on your door. You have a right to your time.
- Try a variety of learning methods. Diagramming, note taking,
outlining, even talking into a tape recorder are study techniques that can increase concentration. Use whatever study skills you are most comfortable with. Be creative.

* Monitor your progress. Being busy is not always the same as being productive. Stop occasionally and ask yourself: Am I contributing right now to my learning goal? If the answer is yes, keep working. If no, ask yourself why. If you're not making progress because of tension or fatigue, take a break—without feeling guilty. Regular breaks can improve the learning process.

6. Discover your own learning style. Educators Rita and Ken Dunn tell the story of three children who each received a bicycle for Christmas. The bikes, purchased unassembled, had to be put together by parents. Tim's father read the directions carefully before he set to work. Mary's father laid out the pieces on the floor and handed the directions to Mary's mother. "Read this to me," he said, as he surveyed the components. George's mother instinctively began fitting pieces together, glancing at the directions only when stumped. By day's end, all three bikes were assembled, each from a different approach.

"Although they didn't realize it," says Rita Dunn, professor of education at St. John's University in New York City, "the parents had worked according to their own learning styles."

"Our approaches to unfamiliar material are as unique and specialized as we are, and a key to learning is recognizing—and accommodating—the style that suits us best," says Ken Dunn, professor of education at Queens College in New York City.

Learning styles can vary dramatically. The Dunns have developed a Productivity Environment Preference Survey, which identifies 21 elements that affect the way we learn. These factors include noise level, lighting, amount of supervision required, even the time of day.

What's your style? Try some self-analysis. What, for example, is your approach to putting together an unassembled item? Do you concentrate better in the morning or in the evening? In a noisy environment or a quiet one? Make a list of all the pluses and minuses you can identify. Then use this list to create the learning environment best for you.

Whichever style works for you, the good news is that you can expand your learning capacity. And this can make your life fuller and more productive.

For information on reprints of this article, see page 200

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York Attack

A senator, finding himself seated next to a boring, long-winded dinner companion, tried for hours to say something but succeeded only in making slight sounds. Finally his companion stopped talking. "What's that strange sound you've been making?" he demanded.

"It's a word," replied the senator, "trying to get in edgewise."

—Fancy Fancy World
he could write his essays and exams.

"What do you plan to do with these degrees?" asked one of his professors. (My friend was about to get his master's degree.)

"Teach," he replied.

"School for the Blind, eh? Well, that will be a good life...."

"No, At college."

"Hum," mused the professor.

"How could you possibly read and grade your students' essays?"

"There has to be a way," said my friend. And there was.

First there were friends and family who read those essays to him, and he dictated corrections and grades. Then the tape recorder came along, and his students read their work into that. He could sit with his machine, listen, and type comments and suggestions on his electric typewriter. Smooth as silk! I must confess, the friend I have been describing is myself.

More than 50 years ago, I picked up my first stylus and painstakingly punched out the first letters on my Braille slate. Now I sit in my office in the English department of a fine college writing this article on my word processor. Because it is equipped with a speech synthesizer, it can read back to me what I have written.

In over 30 years as a professor, I have depended less on friends and family and more on technology. I'm especially indebted to organizations like recording for the Blind, whose volunteer readers put books on audio cassettes, free-on-loan, for people like me to listen to and to teach from. Those advances have made my career not only possible but almost comfortable.

My case is not unusual. It's merely one illustration that, no matter what your situation, some person has been through what you have thought about it and had some ideas about how to make things better.

Don't sharpen your teeth—sharpen your wits. Find out what those others have thought, and maybe you can improve upon their ideas. That's how we human beings have managed to survive while other species have failed. If we stop using our minds, we risk being tossed up on the shelf of history to gather dust with others who failed to adapt.


Ego Tripped

Since I was getting a lot of comments on my recent weight loss, I came to expect admiring remarks from nearly everyone I met. Therefore, when I went to the store to buy some paint for our kitchen and the clerk asked me, "Thinner?" I replied, "Yes, a bit. Twenty-six pounds, to be exact."

The clerk looked blank at first then said, "That's nice—but I meant, 'Do you need any paint thinner?'"  

—Contributed by Erica Matian

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The Mysteries of America's "Ancient Ones"

The cradle of the Anasazi's incredible, prehistoric culture was a barren canyon in the Southwest. Today we find only tantalizing clues to their remarkable achievements and decline.

By Ronald Schiller

During a snowstorm in 1888, two cowboys searching for stray cattle peered into a canyon in Colorado's desolate Mesa Verde. There they saw, shimmering through the falling snow, the outlines of buildings where no buildings ought to have been. Climbing down into a large recess halfway to the bottom of a steep cliff, the men entered a magnificent little city of multistoried stone dwellings. Inside the structures they found pottery, tools and the ashes of cooking fires, all untouched by time. The site, now famed as Cliff Palace, was one of the

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Photo: Michael T. Frease, National Geographic Society
settled the most remarkable prehistoric American Indians north of Mexico.

Named the Anasazi—the ancient ones—by the later-arriving Navajos, these enigmatic Indians disappeared in the 13th century. They left behind an advanced culture and stone buildings so impressive that some early archeologists erroneously attributed them to the far-traveling Toltecs of Mexico, 2000 miles to the south. Among the most notable ruins are those in the Mesa Verde and Hovenweep regions of southwestern Colorado and adjoining Utah, in the Kayenta territory straddling the Arizona-Utah border, and in picturesque Canyon de Chelly in northeastern Arizona.

Perhaps the most important Anasazi center was in Chaco, a canyon 25 miles long and one mile wide in northwestern New Mexico. There, around A.D. 1050, the people experienced a sudden burst of creativity so unaccounted that archeologists refer to it as the “Chaco phenomenon.” In a few decades they built a complex of 12 elaborate towns that blossomed into the religious, political and commercial capital of the Anasazi world, including smaller farming communities; the canyon held a population estimated to be over 5000, extraordinarily large for a stone-age-type desert society.

The people lived in multistoried “apartment” buildings called Great Houses, which were not equal in size until large ones were built in urban centers some eight centuries later. Why such concentrated living quarters were necessary with so much land available is one mystery. Each of the Great Houses was constructed of hundreds of thousands of flat stones and more than 20,000 pine and spruce roof beams, which had to be hauled from as far as 35 miles away—without the aid of draft animals or wheeled vehicles. The masonry was phenomenally, with each stone block meticulously chiseled, cemented with a thin layer of mud, and veneered with smaller stones. Esthetically pleasing, the buildings blend into the natural scenery.

Grandest of the Great Houses was Pueblo Bonito. A five-story, D-shaped structure, it covered three acres and contained some 800 rooms. According to tree-ring dating of its roof timbers, the building took some 50 years to complete.

Circular rooms, called kivas, of which there are 37 in Pueblo Bonito alone, figured prominently in Anasazi life. Thought to have been used for worship, they also may have served as clubhouses for the men, who, in the matrilineal Anasazi society, were the boarders and providers in their wives’ homes. The kivas were usually covered with beehive-shaped roof of timbers; on top of which earth and rubble were packed. The only entrance was by ladder through a hole in the roof.

Inside there was a sacred hole in the ground for spirits to pass through from the underworld. Fresh air flowed in from stone ducts.

The largest Chaco kiva—63 feet in diameter and 15 feet deep—is at nearby Casa Rinconada. Its acoustics are so good that a whisper can be heard from one side to another, and a sneeze is amplified to a roar.

Each Chaco family occupied a suite of rooms in the Great Houses some of which were used for storage, turkey pens, trash disposal or, occasionally, burial chambers. The living rooms, which were up to 12 feet long and about 8 feet high, were finished with a kind of white plaster and decorated with frescoes. Windows and doors were small to reduce heat loss in winter. Warmth was provided by interior fires that men averaged five feet, four inches in height, the women two inches shorter—about the same as Europeans of that era.

Why the Chacoans chose to settle in a desert, thin-soiled and arid canyon remains another mystery. But their mastery of irrigation is what enabled them to flourish and support a considerably larger population than now occupies the area. They evolved a system of dams and cisterns to collect and hold the precious rainwater that flowed down the canyon walls. They formed it through sills, basins and water gates to terraced plots where they raised corn, beans and squash. To survive the frequent droughts, the Anasazi during bumper years had to set aside enough food to see them through the lean years.

Nevertheless, the Anasazi lived a rich life. They dined on stews of meat, corn mush, squash and wild vegetables, with flat cornmeal cake baked on stone middles. They wore robes of hides, fur, feathers and woven cotton, sewn together with bone needles and thorns of the yucca plant. Some of them died with cushions of finely spun, coarse hair.

Always they had to know writing or numination, the Anasazi were skilled astronomers who built what appear to be celestial observatories on cliff tops. One of the most famous is at Pueblo Bonito in Chaco, where needles of sunlight (archeologists refer to them as “sun daggers”) fall between vertical stone slabs precisely at the solstices and equinoxes.

Since they were active traders, the Anasazi may have acquired their astronomy skills from the distant
Mayan. In fact, Chaco appears to have been a prosperous trading center. The Chacoans apparently bought raw cotton from other Anasazi communities, dried buffalo meat from the plains Indians farther east, copper bells and macaws from Mexico, and seashells from the Pacific coast. In exchange they offered turquoise, mined over 100 miles away. A half-million pieces were found in Pueblo Bonito alone, suggesting that it may have been a turquoise-manufacturing center.

The Anasazi pottery, some in the shapes of animals, was painted in striking geometric black-and-white designs. They fashioned exquisite jewelry of turquoise and shell, and were clever basket weavers. They played music on drums, rattles, wooden pipes, and flutes made of bird bones, and decorated or painted abstract pictures on cliff faces.

A network of roads, radiating from Chaco helped maintain its commercial dominance. Curiously, in a land of foot travel, these roads were hard-surfaced and 30 feet wide. The hundreds of miles of highway discovered so far run north-south through the rugged terrain, crossing gullies on causeways and climbing cliffs on broad stairways carved into the rock. Every eight to ten miles are the ruins of small pueblos, perhaps rest stops for travelers. Also near the roads are isolated stone circles, apparently signal stations from which messages could have been relayed by fire or smoke.

Around 1150, at the height of its power and prosperity, the Chaco culture mysteriously began to decline. The inhabitants of the canyon abandoned their splendid cities and left the area. Various explanations for the collapse include: over-population, drought, colder weather that shortened the growing season, and overcultivation of the soil.

But there may be a grimmer reason as well. In the mid-12th century, the previously peace-loving people of Pueblo Bonito and the other habitations fended up the doors and windows of rooms facing to the outside of the Great Houses and blocked the main entrances of the pueblos with stone, allowing access only by ladder-moves seemingly designed to protect themselves from intruders. Still, nowhere in the ruins have mutilated bodies or other signs of war been found. Whatever the reason, the people left the basin they had occupied for centuries, never to return.

At about the same time the Chacoans were departing, and perhaps for the same reason, the Anasazi of Mesa Verde and elsewhere left their exposed villages on the mesas and built new pueblos nestled in the caves and overhangs of the canyon walls. These cliff dwellings offered protection from enemies. They were set too far into the walls to be bombarded by rocks dropped from above, and could be reached only by precarious hand- and footholds carved into the cliffs. But we have not a clue as to why the attackers could have been or whether there actually were any. Some archaeologists suspect that the communities may have been feuding among themselves over water rights or scarce arable land.

For a time the Mesa Verdans prospered. But the winds of disaster, which had driven the Chacoans from their homes a century earlier, seem to have pursed these Anasazi as well. In 1276, the tree-ring dates reveal, a savage drought struck the Southwest and lasted for 25 years. As the crisis worsened, the Mesa Verdans began to depart, leaving their cliff dwellings intact. By the year 1300, archaeologists believe, few Anasazi were left in their once-wide domain.

Drifting southward into Arizona and eastward into New Mexico and the upper Rio Grande valley, they became ancestors of the Hopi, Zuni and other tribes, who still carry on some of their religious and social traditions, and live in adobe pueblos reminiscent of their fine stone dwellings.

But the fame of the Ancient Ones persisted, spreading to Mexico City, where the legend arose that they lived in seven cities of gold. In 1540, Francisco de Coronado led an expedition to find and loot the fabulous institutions. He spent two years exploring the territory, but found no treasure. It's easy to see how the legend evolved, however, for when viewed from a distance, with the rays of the afternoon sun glancing from their luminous surfaces, the ancient ruins do look, as though they are fashioned of gold.

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**Anatomy Lesson**

When nature designed the male knee, she obviously had neither football nor walking shorts in mind.

—Lil Vanderbilt, NANA

**The Human Body** has several hundred muscles, mostly to tell us we shouldn't have jogged so far.

—The Law Journal
A prominent anchorman warns of TV's adverse effect on our culture and our values

Condensed from a speech
ROBERT MACNEIL

IT IS DIFFICULT TO ESCAPE the influence of television. If you fit the statistical averages, by the age of 20 you will have been exposed to at least 20,000 hours of television. You can add 10,000 hours for each decade you have lived after the age of 20. The only things Americans do more than watch television are work and sleep.

Calculate for a moment what could be done with even a part of those hours. Five thousand hours, I am told, are what a typical college undergraduate spends working on a bachelor's degree. In 10,000 hours you could have learned enough to become an astronomer or engineer. You could have learned several languages fluently. If it appealed to you, you could be reading Homer in the original Greek or Dostoyevsky in Russian. If it didn't, you could have walked around the world and written a book about it.

The trouble with television is that it discourages concentration. Almost anything interesting and rewarding in life requires some constructive, consistently applied effort. The dullest, the least gifted of us can achieve things that seem miraculous to those who never concentrate on anything. But television encourages us to apply no effort. It sells us instant gratification. It diverts us only to divert, to make the time pass without pain.

Television's variety becomes a narcotic, not a stimulus. Its serial, kaleidoscopic exposures force us to follow its lead. The viewer is on a perpetual lunch hour; 10 minutes at the museum, 10 at the cathedral, 10...
for a drink, then back on the bus to
the next attraction—except on tele-
vision. Typically, the spans allotted
are on the order of minutes or sec-
onds, and the chosen delights are
more often car crashes and people
killing one another. In short, a lot of
television usurps one of the most
precious of all human gifts, the abili-
ty to focus your attention yourself,
rather than just passively surrender it.

Capturing your attention—and
holding it—is the prime motive of
most television programming and
enhances its role as a profitable ad-
vertising vehicle. Producers live
in constant fear of losing anyone's
attention anywhere. The surest way
of avoiding doing so is to keep every-
thing brief, not to strain the attention
of anyone but instead to provide
constant stimulation through vari-
ty, novelty, action, and movement.
Quite simply, television operates
on the appeal to the short attention span.

It is simply the easiest way out.
But this has come to be regarded as
given, as inherent in the medium it-
self, as an imperative, as though
General Stumpff, or one of the other
major pioneers of video, had
required us to take tablets of stone com-
manding that nothing in television
shall ever require more than a few
moments' concentration.

In its place is one who can
quarrel with a medium that so bril-
lantly packages escapist entertain-
ment as a mass-marketing tool? But
I see its values now pervading this
nation and its life. It has become
fashionable to think that, like fast
food, fast ideas are the way to get to
a fast-moving, impatient public.

In the case of news, this practice,
in my view, results in inefficient
communication. I question how
much of television's nightly news ef-
fort is really absorbable and under-
standable. Much of it is what has
been aptly described as "ducking
running with scamps." I think the
technique of coherence, I think it
tends to make things ultimately bor-
ing and dismissible (unless they are
accompanied by horrifying pictures)
because almost anything is boring
and dismissible if you know almost
nothing about it.

I believe that TV's appeal to the
short attention span is not only inef-
ficient communication but devaluing
as well. Consider the casual assump-
tions that television tends to
cultivate: that complexity must be
avoided, that visual stimulation is a
substitute for thought, that verbal
precision is an anachronism. It may
be old-fashioned, but I was taught
that thought is words, arranged in
grammatically precise ways.

There is a crisis of literacy in this
country. Some studies estimate that
the number of American adults are
functionally illiterate and cannot
read or write well enough to answer
a want ad or understand the instruc-
tions on a medicine bottle.

Literacy may not be an inher-
itable human right, but it is one that
the highly literate Founding Fathers
might not have found unreasonable
or even unattainable. We are not only
not attaining it as a nation, stat-
tistically speaking, but we are falling
further and further short of attaining
it. And, while I would not be so
simple as to suggest that tele-
vision is the cause, I believe it con-
tributes and is an influence.

Everything about this nation—the
structure of the society, its forms of
family organization, its economy, its
place in the world—has become
more complex, not less. Yet its dom-
inating communications instrument,
its principal form of national link-
age, is one that sells next resolutions
to human problems that usually
have no neat resolutions. It is all
symbolized in my mind by the huge-
ly successful art form that television
has made central to the culture, the
30-second commercial: the tiny dra-
a of the earnest housewife who
finds happiness in choosing the right
toothpaste.

When before in human history has
so much humanity collectively sur-
rendered so much of its leisure to
one toy, one mass diversion? When
before has virtually an entire nation
surrendered itself wholesale to a medi-
un for selling?

Some years ago Yale University
law professor Charles L. Black, Jr.,
who wrote: "... forced feeding on trivial
fare is not itself a trivial matter." I
think this society is being force-fed
with trivial fare, and I fear that the
effects on our habits of mind, our
language, our tolerance for effort,
and our appetite for complexity are
only dimly perceived. If I am wrong,
we will have done no harm to look at
the issue skeptically and critically,
to consider how we should be resist-
ing it. I hope you will join with me in
doing so.

Full Circle

BASEBALL, it has been said, is a game of inches. But even more, it is
a game of innocence. It is a child holding tightly to his father's hand as he
is taken to his first big league ball game. Some 20 years later the scene is
repeated—the child, now a man, has his own hand clasped just as tightly
by his son as they approach the ballpark together for the first time.

The father, as his father before him, knows full well that baseball is as
much business as sport. He also knows that the world is not just and that
life is not fair. But, given the slightest encouragement, mind and heart
keep to their separate orbits. As father and son pass through the turn-
stiles, walk side by side through the dimly lit passageways under the
stadium, and then suddenly emerge into the dazzling brightness—the vast
green playing field laid out like a magic carpet before them—they share
the excitement that today is something very special for both of them. The
parent passes on the wonder and awe of his own youth to his children,
and, in so doing, one becomes it within himself.

—Anthony J. Conner, Baseball: For the Love of It (Macmillan)

Claim Check. The luggage from the Boeing 747 from which I had
debarked seemed to take forever to appear. I had positioned myself near
the conveyor and was delighted to see that my bag was the first to slide
down onto the carrousel. As I reached for the handle, the man
behind me remarked in surprise, "I didn't know that the first suitcase ever
belonged to anyone."

—Contributed by Norman M. Sladican
A cardiologist's own heart attack led to a widening awareness of the critical role of stress in cardiac death. If you're a "hot reactor," his advice may save your life.

By Walter S. Ross

When Robert S. Ross, international expert on stress and heart health, suddenly became his own patient, the experience, which nearly killed him, changed his life.

At 45 he had been made chief of cardiology at the University of Nebraska Medical School. For most cardiologists this would have been a triumph, but not for Robert Ross. This was three years behind his personal career timetable. Besides, his goal to create a cardiovascular center at Nebraska to do groundbreaking research was running into frustrating roadblocks.

"Desperately, I picked up the pace," Dr. Ross recalls. "I crossed the country-lecturing, trying to build support among physicians, flying in and out on a moment's notice."

Though he was almost always tired, he was not concerned. He knew he had none of the traditional risk factors of heart disease: his father had lived to 75, his mother was still healthy at 83; he didn't smoke, wasn't overweight, had normal blood pressure and cholesterol, no diabetes. "I thought I was immune to heart disease," Ross says.

In the spring of 1972, after a disheartening confrontation one day over his new institute, Ross blazed with anger and couldn't seem to calm down. Next morning, after a long drive and sleepless night, he gave a medical lecture. Following a heavy lunch, he tried to diagnose cases from a colleague's slides, but his mind was foggy, his eyes were blurry. He felt dizzy.

Suddenly, Ross says, "Intense pressure went from my breastbone up into my shoulders, neck and jaws, and down both arms. I had trouble breathing."

He began to sweat. He went to the coronary-care unit and asked for nitroglycerin tablets. No relief. He began getting bowel cramps, nausea. The pain got worse.

"The game was over. I diagnosed my own condition: myocardial infarction. I asked the head nurse for a vacant bed, stretched out and told her, 'I've just had a heart attack.'"

Mysterious Deaths. During three months of recuperation, Ross reflected on his life. "For the first time I realized it had become a joyless treadmill. I asked myself: Is it worth dying for?"

With a firm "No" ringing in his ears, Ross changed. He started to take better care of himself, exercised, got enough sleep. "I had looked into the abyss," Ross says. "After that, I decided to get rid of the small stuff; pretty soon I saw it was all small stuff."

Ross knew that more than 50 percent of people who are stricken with heart disease had, like himself, no classic risk factors. The missing trigger, he decided, must be unbearable stress. For years researchers had been looking for a clinically measurable connection between stress and heart disease. Now Ross was more determined than ever to help pinpoint the connection.

His own quest had begun five years earlier when, as professor of cardiology at the University of Florida, he investigated a puzzling problem at the Kennedy Space Center: the young aerospace experts working on the moon shot had a significantly higher rate of cardiac disease and death than did age-matched control groups.

Ross found no medical explanation, no abnormal level of risk factors. But there was evidence of stress: the men and their families also had higher rates of suicide, alcoholism and divorce than did other groups.

A team of investigators called in by Ross and NASA medical director Dr. Laurent LeBoeuf noted a disturbing coincidence: more sudden deaths occurred after a few space shots than at any other time. Peering deeper, they saw a possible link. NASA's budget was being stochol, so that every time a rocket was successfully launched, 15 per-

(Continued on page 36)
blood-clot formation is thus made easier, and the amplitude of the fight-or-flight response is increased. Cortisol is responsible, too, for sensitizing small blood vessels to adrenalin—in Dr. Eliot's words, "giving a bigger bang for the buck of adrenalin."

These reactions are a heritage from prehistoric times, when threats—such as saber-toothed tigers—were mainly tangible. Designed to save lives, these "automatic" reactions of the body become life-threatening in modern society, for they prepare the body for behavior for which there is no means of expression. Says Dr. Eliot, "It's like racing the motor with the brakes locked."

Another link of stress to heart disease is suggested by evidence that stress alone can raise human cholesterol levels. Dr. Meyer Friedman and Dr. Ray Rosenman of theHarold Brunn Institute in San Francisco's Mt. Zion and Medical Center found that the blood cholesterol levels of some public accountants studied rose as high as 60 percent between January 1 and April 15—tax time—even though their diets did not change.

Friedman and Rosenman later developed a landmark concept linking certain behavior to coronary risk. Their test categorized people according to hostility, aggressiveness, irritability, drive, time pressure. Those with the highest levels were classified "Type A" personalities, and had about twice the risk of heart attack of less hostile, more relaxed individuals (Type B's).

But Dr. James C. Buell, Eliot's colleague, suspected that not all Type A's are equally at risk. So he began searching for a more precise method to detect people at greatest risk. His answer was a combination of instruments that use high-frequency electrical signals to measure and record cardiovascular reactions...
to mental stress. The sitting patient is connected to the system, which first monitors responses to "nonstress" (including heart rate, liters of blood pumped per minute, rigidity of small arteries). After these "at rest" readings are established, recordings are taken of the patient's physical responses to three mental-stress tests: a competitive video game; a timed, fast-paced arithmetic test; and plunging a hand into a bucket of ice water for 60 seconds.

Eliot and Buell found that those displaying Type A behavior differed greatly among themselves in their cardiovascular reactions to these stresses. Two bank presidents, both flaming Type A's, reacted with visible violence to the stress tests. Yet instrument readouts clearly showed that one man was unruffled inside, his blood pressure a normal 130 over 80, while the other hit 220 over 140 in two minutes. Eliot named them "cool" and "hot" reactors.

Here was another piece of evidence in the long search to define a scientific measure for predicting cardiac death. In the four years since developing his concept, Eliot has used it to identify people in greatest danger of heart attack. To avert these attacks, his clinic—the National Center for Preventive and Stress Medicine at St. Luke's Hospital in Phoenix—and other stress-disorders centers across the country have also adapted treatment methods that range from biofeedback to relaxation training (see box, page 79). A few hot reactors may need psychotherapy and medication as well.

"Too much stress is usually the result of a mismatch between your expectations and your environment," says Dr. Eliot. "You can regain control by changing either one. Or sometimes you simply have to learn to flow rather than resist.

"People who do this truly change. And when they change their lives, they change their physiology. They become cool reactors. We know this because we can measure it with instruments."

**READER'S DIGEST**

British actress Mrs. Patrick Campbell made short work of bores. At a dinner party her professorial companion subjected her to a tiresome defense of the art world: "They are wonderful little creatures; they have their own police force and their own army."

Leaning forward with a show of absorbed interest, she breathlessly asked, "No navy, I suppose?"

—Margot Peters, Mrs. Pat: The Life of Mrs. Patrick Campbell (Knopf)
Emotional Child Abuse: The Invisible Plague

Nobody knows the number of those afflicted. But awareness is growing among mental-health experts that the youngest deprived of attention and affection may be even more damaged than one who is battered.

With rage on the child’s behalf, I said nothing. After all, I rationalized, the mother would just tell me to mind my own business. But I had no doubt that what I had witnessed was in many ways as bad as a brutal beating. It was emotional child abuse.

“The bruises don’t show on the outside, so there are no statistics on how many children are victims,” says Dr. Elizabeth Watkins, chief of pediatric primary care at St. Luke’s-Roosevelt Hospital Center in New York City. “But anyone who works with children knows that the problem is widespread.”

Condensed from GLAMOUR

University of Minnesota psychologist Byron Egeland, who has conducted extensive studies on parenting and early-childhood development, says the effects of emotional child abuse may be as devastating as those of physical abuse. Research conducted by Egeland and his colleagues suggests that emotionally abused children suffer an even greater decline in mental and psychological development as they grow older than do physically abused children.

This is because, according to authorities on child development, emotional abuse involves nothing less than the systemic destruction of a child’s self-esteem. The key word is systematic.

The mother I overheard used words that indicated a sad pattern: “It’s the same every week. You always make your daddy and me mad. Now don’t you believe you’re really my daughter.” These weren’t simply the remarks of a lapsed mother having a bad day; they were those of a woman who made a habit of abusing her toddler.

Abusive parents are prompted not by children’s misbehavior, but by their own psychological problems. Whether abusive parents come from low-income or affluent families, they are usually people who received inadequate love and nurturing from their own parents.

Nearly all are unable to see that a child’s behavior may not be related to anything the parent has done or failed to do. An abusive parent may feel, for instance, that an infant is crying not as an expression of hunger or fear, but because the baby is “bad” or “too” to get me.”

Dr. Jay Leifer, a New York psychiatrist and former editor of the newsletter for the Society of Adolescent Psychiatry, refers to the “four Ds” of emotional abuse—denigration, distortion, deprivation and damnation. Abusive parents may use one or all of the four Ds to play out their own psychological conflicts and avoid functioning.

Deprivation and distancing. When five-year-old Sally broke her arm in a playground accident, her kindergarten teacher didn’t realize the child was hurt until she found her weeping silently in a corner. At the hospital, where the teacher met Sally’s mother, the little girl didn’t turn to her mother for comfort. Instead, she was off quietly with a nurse and didn’t seem to notice when her mother ignored the nurse’s invitation to accompany them. “Rather than put her arm around her child, the first thing her mother did was look for a coffee machine,” said the teacher. “I could see why Sally didn’t tell me she was hurt. She was accustomed to being ignored.”

Psychologically unstable parents rarely consider the baby or express much interest in the infant’s development. As a result, their babies fail to develop with psychologists call a secure attachment to their parents. When securely attached children need reassurance, they know they can get it from their parents and, eventually, from other adults who care for them.

“A physically abused child will avoid the caregiver for fear of being hit,” says psychologist Egeland. “An emotionally abused child does the same thing to avoid the dis-
appointment of not being accepted. "Unavailability is shattering because a child doesn't get any of the usual emotional rewards for curiosity, growth and accomplishment," continues Eyeland. "Think of a normal parent's reaction when a child takes a first step; it's a celebration, a reason for praise and excitement. But in a home where emotional unavailability is the standard, the milestone is ignored. If the parent notices at all, it's with irritation. After all, a child who can walk will only demand closer supervision and attention."

**Depreciation.** In some families, parents "team up" in deprecating a child, noting a steady stream of verbal abuse that discounts the child's achievements and blows out of proportion every sign of nonbehavior: in other families, one parent is the active abuser and one is a silent partner.

Words like "always" and "never"—implying that a child invariably fails to live up to a parent's expectations—are keys to distinguishing a consistently abusive parent from one who criticizes occasionally in anger or frustration.

Still, a 26-year-old computer programmer who says she has never enjoyed a satisfying relationship with a man, grew up with a father who constantly undermined her self-esteem. "He had a chair," she recalls, "her voice quavering, "that he used to repeat at least a dozen times a day: 'Punaise and fat, punaise and fat, no boy will ever be seen with that.' To this day I find it almost impossible to believe it when a man makes me a compliment. I still hear my father's voice."

In ambitious middle-class families, one of the most common forms of emotional abuse is the denigration of any achievement that falls short of perfection, such as when a child is punished for bringing home a B instead of an A. Jerrold David, director of the Infant-Parent Program at San Francisco General Hospital, observes that "perfectionist" parents may display irrational expectations. "They have completely unrealistic ideas about how long an infant or toddler should wait to be toilet-trained, or be expected to be quiet," she notes. "So normal behavior is seen as a deficiency on the part of the child, and a failure on the part of the parent."

On a recent cross-country flight I saw an example of this type of behavior when I sat across the aisle from a young couple traveling with a year-old baby. The cabin service was slower than usual, and the flight attendant had failed to warm up the baby's bottle in time for his feeding. The baby, predictably, started to cry—and the father refused either to hold him while the mother went to find the stewardess, or to look for the bottle himself. "That kid can't wait five seconds for anything," the father said (apparently oblivious to the loud complaints of adult passengers about the lateness of their dinners). "If you think I'm going to bother the stewardess because that kid is spoiled rotten, you're crazy. There's something really wrong with him."

**Domination.** Four-year-old Tommy was recovering from a routine tonsillectomy in the children's ward of a hospital when the nurses noticed he was unusually withdrawn. He refused to speak to anyone. When Tommy's pediatrician suggested that his mother discuss her son's behavior with a staff psychologist, she became furious. "I've told him never to talk to anyone—children or adults—if I don't know them," she explained. "I'm not going to spoil his training just because he's in the hospital." Later, the pediatrician learned that Tommy's mother had in fact told the boy he would die if he talked to strangers.

The use of such extreme threats to stifle a child's natural curiosity is a common form of emotional abuse, according to psychologists and pediatricians. "We're talking about the kind of domination in which a parent tries to take control of a child's every action," says Dr. W. Watkins, "instead of giving him a real boundary—like a fence to keep a child from running into the street—a parent creates invisible walls. The child is told that terrible things will happen if he explores and violates the parent's orders."

Dr. Lefer notes that all parents try to dominate their children in certain respects—by setting standards of conduct and trying to instill parental values. "But there's a big difference between domination through education and example and domination through cruelty," he says. "The abusive parent realizes his way by terrorizing the child into following his or her wishes."

For some young adults, the experience of having been emotionally abused as children has made them determined to become good parents themselves. But the problems of many "second-generation" child abusers don't surface until they already have children of their own.

The best hope in such cases, experts say, is therapy that involves every member of the family. "When a child is being emotionally abused," says Dr. Lefer, "the problem cannot be successfully treated in isolation. Once a parent realizes something is wrong, this can open up the whole matter of how the family works. And other family members can be brought into the therapeutic process."

Looking beyond the immediate family, experts say that emotional child abuse is shrouded by the reluctance of outsiders—including friends.
and relatives—to confront abusive parents. "Many children who are remorselessly denigrated by their parents think they deserve it," notes psychologist Paul. "The silence and inactivity of other adults help convince the child that it's true: he really is worthless, evil or a coward."

I asked each of the professionals I interviewed whether I had done the right thing in keeping silent when I overheard the mother calling her child a coward. All felt I should have spoken up and said something like, "Everyone is afraid of some things. It's nothing to be ashamed of."

I asked one psychologist if she thought that a challenge from another adult might not have made the mother treat her child even more harshly. "That's possible," she replied, "but at least the child would have understood that not every adult agrees with her mother. That's important, because we know sometimes children are able to survive abuse if they find someone—a teacher, an aunt or uncle—who makes them feel valuable and worthwhile in spite of what their parents say.

"People shouldn't mind their own business when a child's life is in danger—and that means the heart and mind as well as the body."

-from information on reprints, for this article, see page 200.

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Caught in Passing,

Man to neighbor: "Of course my mechanic is good. If he wasn't, would I keep going back to him every week?"

—Tom Collins, Los Angeles Times Syndicate

Wife to spouse: "I don't want to brag, but here it is February and I've kept every one of my New Year's resolutions. I've kept them in a manila folder in the back of my desk."

—Ohlen's Current Comedy

In the elevator: "I'm what you might call a negative socialite—I want to be invited but I don't want to go."

—James Dent in Charleston, W.Va., Gazette

At the beauty parlor: "I would never have believed that story about Edna if I hadn't started it myself."

—The Girl, News Group Chicago

In the pub: "I'm really discouraged financially. It used to be just L.O.U.—now I owe everybody!"

—Philip Lazarus

Tourist at a Caribbean resort: "She shouldn't complain about her sunburn. After all, she basked for it."

—Sidon Golub, quoted by Bob Herzohl in Chicago Sun-Times

At a party: "Is he indecisive? The only thing he ever takes a stand on is the bathroom scale."

—"Kor's Column" in Chicago Sun-Times

Fashionable woman on a spending spree to friend: "My Jerry's worked hard all his life. I deserve it."

—Irish Caw in San Francisco Chronicle
Appendix E

Suggested Discussion Questions
for the Language Experience Approach

Advance Organizer Group
"The Trouble With Television"

1. How many hours a day, on the average, do you watch television?

2. What are some of the shows which you watch most often?

3. Why do you think so many people watch television rather than read the newspaper or perhaps a good book?

4. How are the programs which you watch paid for?

5. How much influence on programming do you think the advertisers have?

6. Which would you rather watch: an action packed show such as "Miami Vice" or an educational show such as "The Underwater World of Jacques Cousteau"?

7. Why do you think you feel that way?

"Six Keys to Quicker Learning"

1. What do the letters I.Q. usually stand for?

2. Do you feel that a person's I.Q. determines how he/she will do in school?

3. What might be some other reasons for a person doing well in school?

4. Truthfully, how many of you actually study for a test?

5. How long do you study when you decide to study for a test?

6. How might some of us do better in school if we wanted to.
"The Mysteries of the Ancient Ones"

1. Today we are going to read about a tribe of Indians who lived in the desert of America's Southwest over 600 years ago. What type of houses do you think they lived in?

2. How might these people survived in such a dry region?

3. If you were to dig up the ruins of this civilization, what do you think you might find?

4. What might be some of the dangers which faced a tribe living in the desert over 600 years ago?

"Stress: It's Not Worth Dying For"

1. What is 'stress'?

2. What are some things which cause 'stress' in your life?

3. What happens to you emotionally when you experience stress?

4. What are some of the physical side effects of stress?

5. What are some things which cause adults to experience stress?

6. What are some ways which we can control the effects of stress in our lives?
"Emotional Child Abuse"

1. What is 'child abuse'?

2. Does a child necessarily have to be abused physically in order to be abused?

3. What are some psychological ways in which parents can abuse their children?

4. How would you feel about yourself if one or both of your parents were always putting you down?

5. Why do you think parents abuse their children in the first place?

6. Which do you think is worse, emotional or physical child abuse?
Appendix F

Vocabulary Words for the

Teacher Structured Vocabulary Organizer Group
"The Trouble With Television"
1. constructive
2. miraculous
3. diverts
4. kaleidoscopic
5. perpetual
6. anachronism

"Six Keys to Quicker Learning"
1. absorbent
2. stymied
3. aptitude
4. mnemonic
5. cognitive

"The Mysteries of the Ancient Ones"
1. enigmatic
2. erroneously
3. attributed
4. meticulously
5. matriarchal
"Stress: It's Not Worth Dying For"
1. cardiovascular & cardiac
2. colleague
3. coronary
4. myocardial infarction
5. recuperation
6. abyss
7. pathological
8. adrenalin
9. amplitude
10. tangible

"Emotional Child Abuse"
1. berating
2. pediatric
3. extensive
4. devastate
5. affluent
6. deprivation
7. deprecation
8. denigration
9. domination
Appendix G

Posttest Scores
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Reading Comprehension

Posttest Results

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### Reading Comprehension

#### Delayed Posttest Results

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