EFFECTS OF A MODIFIED CLOZE PROCEDURE ON
THE READING COMPREHENSION AND VOCABULARY
OF SECOND, THIRD AND FOURTH GRADE PUPILS

A thesis submitted in partial satisfaction of the
requirements for the degree of Master of Arts in
Elementary Education: Reading Improvement

by

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The thesis of Robert Stevens Wade is approved:

California State University, Northridge

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DEDICATION

The writer wishes to dedicate this thesis to his, wife and sons whom he loves greatly.

R.S.W.
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ABSTRACT

EFFECTS OF A MODIFIED CLOZE PROCEDURE ON
THE READING COMPREHENSION AND VOCABULARY
OF SECOND, THIRD AND FOURTH GRADE PUPILS

By

Robert Stevens Wade

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This study was conducted to determine the effects of a modified cloze procedure on the reading comprehension and vocabulary of second, third and fourth grade pupils.

The sample was composed of 166 second, third and fourth grade pupils. A Pretest-Posttest Control Group design was employed. Both groups were pretested with the Stanford Achievement Test, Form J, for reading comprehension and vocabulary development.

The experimental group was exposed to six weeks of a modified cloze procedure, utilized as an instructional technique. No special treatment was supplied for the control group. At the conclusion of the treatment period, the control group and experimental group were posttested with the Stanford Achievement Test, Form K.
An analysis of covariance was applied with multiple covariates in relationship to (1) pretest-posttest data; (2) IQ; and, (3) grade. Each of the six hypotheses were treated independently.

The findings of the present study indicated that no significant ratios were attained for reading comprehension and vocabulary. The results indicated that the experimental groups of children using the modified cloze procedure did not significantly outperform the control groups of children who received traditional-basal classroom reading instruction.
CHAPTER I

STATEMENT OF THE PROBLEM

The purpose of this study was to investigate the effects of a modified cloze procedure on the reading comprehension and vocabulary of second, third, and fourth grade pupils.

Rationale for the Study

Since Wilson Taylor (1953) introduced the cloze procedure into professional literature, both the research and utilization of this procedure have increased considerably. Cloze has been utilized in such research areas as determining readability levels (Bormuth, 1968), measuring divergent thinking (Byrne, 1971), and measuring attitudes (Manis and Darves, 1961).

Rankin (1962) in a survey of cloze studies, reported that the majority of research studies had focused on the cloze procedure as a readability test instrument. Schneyer (1965) found that the use of cloze tests in measuring reading comprehension had sufficient validity to justify its usefulness as an evaluating device.

Bortnick and Lopardo (1974, p.2) stated that "the cloze procedure has remained primarily a research tool. Teachers have not made use of it in the classroom, and often have not even heard of the procedure."

The purpose of this study was to investigate the effectiveness
of the cloze procedure as an instructional technique. Culhane (1970) stated that rarely does an instructional technique emerge that is as easily learned or put to use in the classroom as the cloze procedure. He contended that a deeper understanding of the message printed material can be fostered among pupils since they are forced to read carefully, to use context clues, and to become actively involved with what they are reading in order to correctly predict the words that have been deleted from reading material. Bortnick and Lopardo (1974) also contended that context clues are an important word recognition strategy and basic to the extension of a meaning vocabulary for beginning as well as advanced readers. Cloze materials can be utilized in a variety of ways to teach the use of context clues. The fact that pupils must use these context clues and must focus attention on the remaining words in the passage in order to supply the deleted words should result in increased understanding and comprehension of the material being read as well as increased vocabulary development. Thus, the cloze procedure's effectiveness and validity as an instructional technique presents itself as a needed research topic.

Significance of the Study

Factors lending significance to the present study include the need to provide educators with (1) empirical evidence in the form of objective data regarding the effects of a modified cloze procedure on reading comprehension and vocabulary; (2) empirical evidence as to whether a modified cloze procedure can be utilized as an effective means of improving reading comprehension and vocabulary development; (3) verification or nullification of assumptions and claims made in
non-empirical investigations concerned with cloze procedure and reading comprehension and vocabulary development; (4) a model describing the implementation of the modified cloze procedure in instructing reading comprehension and vocabulary development; and, (5) conclusions that either substantiate or negate the merits and practicality of classroom utilization of a modified cloze procedure as an effective instructional device.

Definition of Terms

The following definitions were adopted for the purpose of the present study:

**Cloze Procedure.** The cloze procedure, developed by Wilson Taylor (1953) for the purpose of assessing readability, features the technique involving the deletion of randomly selected words in a passage which the reader is to supply on the basis of context clues.

Good (1973) defines the term as "a procedure used to estimate readability of printed material and to evaluate and improve reading comprehension; based on the Gestalt psychology concept of closure, a term used in the description of behavior that signifies pattern completion; and involving a cloze test of reading selections from which words have been deleted; completion of the test requires that the testee fill the blanks left by the deletion." (See Appendix A for an example of a cloze test passage.)

**Cloze Test.** Good (1973) defines a cloze test as "a test of reading made by replacing words in a regular sequence in a given passage with an underlined blank space in which the pupil writes the
word he believes was deleted.

Modified Cloze Procedure. For the purpose of this study, the modified cloze procedure will consist of a combination of the regular cloze procedure, in which the pupil supplies deleted words in a given passage by writing the word on a prepared, printed passage. In addition, an instructional program in which pupils are paired and presented individual reading passages. Each member of pairing selects a sequence of words to be unpronounced during the oral reading phase of the procedure. Each member reads the preprinted passage orally to the other member of the pairing, pausing before the selected unpronounced words. The listening member of the pairing pronounces the word before the pair proceeds.

Research Questions

Two essential questions were asked in the present study: (1) How does the modified cloze procedure effect reading comprehension for second, third, and fourth grade pupils; and, (2) How does the modified cloze procedure effect vocabulary development for second, third, and fourth grade pupils?

Research Hypotheses

The present study was designed to test and analyze the following null hypotheses:

Hypothesis 1: There will be no significant difference in the reading comprehension posttest mean scores between the second grade experimental group (modified cloze procedure) and the second grade control group as
measured by the Stanford Achievement Test.

Hypothesis 2: There will be no significant difference in the vocabulary posttest mean scores between the second grade experimental group (modified cloze procedure) and the second grade control group as measured by the Stanford Achievement Test.

Hypothesis 3: There will be no significant difference in the reading comprehension posttest mean scores between the third grade experimental group and the third grade control group as measured by the Stanford Achievement Test.

Hypothesis 4: There will be no significant difference in the vocabulary posttest mean scores between the third grade experimental group and the third grade control group as measured by the Stanford Achievement Test.

Hypothesis 5: There will be no significant difference in the reading comprehension posttest mean scores between the fourth grade experimental group and the fourth grade control group as measured by the Stanford Achievement Test.

Hypothesis 6: There will be no significant difference in the vocabulary posttest mean scores between the fourth grade experimental group and the fourth grade control group as measured by the Stanford Achievement Test.

Limitations of the Study

This study was conducted in an elementary school which:

(1) drew from a middle to upper-middle socio-economic community;
(2) had a low minority population; and, (3) the school and the community environment offered many advantages with a receptive and highly cooperative principal and teaching staff. Therefore, this study is only generalizable to schools with similar populations and conditions.

Additionally, random selection of pupils was impossible due to logistical and program limitations. Hence, two intact classrooms were utilized for the purpose of this study.
CHAPTER II

REVIEW OF RELATED LITERATURE

The purpose of the study was to investigate the effect of a modified cloze procedure on the reading comprehension and vocabulary of second, third and fourth grade pupils. This chapter summarizes the literature pertaining to (1) the historical background of the cloze procedure, and (2) studies utilizing the cloze procedure or a modified cloze procedure as an instructional technique for reading comprehension and/or vocabulary development.

Historical Background

The cloze procedure was developed by Wilson L. Taylor in 1953 when he was doing graduate work at the University of Illinois. Taylor applied the statistical principles of randomization to the mutilation of a prose passage. This mathematical deletion of words was utilized as an exercise to determine the success a reader would have in supplying the deleted word. Taylor (1953, p. 414) labeled this the "cloze procedure."

Taylor (1953, p. 416) stated, "It is pronounced like the word 'close' and is derived from 'closure'. The last term is one that Gestalt psychology applies to the human tendency to complete a familiar but not-quite-finished-pattern; to 'see' a broken circle as a whole one, for example, by mentally closing up the gaps."
Weaver (1965) later took issue with Taylor's analogy and claimed that the designation 'cloze' was misleading since many of the common constructs of Gestalt psychology cannot be easily applied to verbal situations. Nevertheless, the term 'cloze' survived.

Taylor (1953, p. 416) in his construction of the procedure, elected to utilize an electronic model for his illustrative definition of the cloze procedure. He stated that the "cloze procedure may be defined as: a method of interrupting a message from a 'transmitter' (writer or speaker), mutilating its language patterns by deleting parts and so administering it to 'receivers' (readers or listeners) so that their attempt to make the patterns whole again potentially yield a considerable number of cloze units".

Taylor (1953, p. 416) defined cloze units as "any single occurrence of a successful attempt to reproduce accurately a part deleted from a 'message' (any language product) by deciding from the context that remains, what the missing part should be".

Initially, Taylor applied the cloze procedure to the task of determining the relative difficulty of a selection of reading material. This was a rather unique approach to readability, for, as Anderson (1967, p. 291) stated, "Gloze as a readability technique involves the reader."

Hafner (1966, p. 415) simply stated the basic theory behind the use of the cloze procedure as a method of determining readability as "the individual's choice of words is an index of his ability to comprehend reading matter."

Taylor (1955, p. 432) having stated his belief that the cloze procedure is a valid indicator of readability, submitted that the cloze
procedure should not be limited to this particular aspect of reading. He wrote, "... as such, its potential usefulness is by no means confined either to readability or to the reading abilities of individuals."

Three years later, Taylor (1956, p. 42) again wrote of the cloze procedure. This time expanding upon his previous premonition of its potential usefulness. He stated, in reference to his initial article, "The technique seems to be an effective guage of 'individual differences' in the comprehension of readers...."

In summary, the cloze procedure was developed in 1953 as a measure of readability through the use of the Gestalt psychology concept of 'closure'. The procedure involves the mutilation of language patterns and their subsequent replacement in the form of cloze units. Since the cloze procedure was introduced into professional literature, both the research and utilization of this procedure have increased considerably.

**Studies Utilizing the Cloze Procedure as an Instructional Technique**

Since Taylor introduced the cloze procedure in 1953, it has remained primarily a research tool. Few researchers, however, have explored the cloze procedure as an instructional technique. Recently professional articles have argued for the utilization of the cloze procedure as an instructional technique. Culhane (1970), Jongsma (1971) and Bortnick and Lopardo (1973, 1974) stated the need for the utilization of the cloze procedure in the classroom. The authors cited methods, procedures and examples for constructing programs for the use of the cloze procedure as an instructional technique.
Although limited, research related to measuring the effect of the cloze procedure as an instructional technique has been conducted. Schneyer (1965) explored the effects of the cloze procedure upon the reading comprehension of sixth grade pupils. A series of 200 word cloze exercises based on material from a basal reading series was utilized in her study. Two types of cloze exercises were prepared at each reader level. One type was based on the deletion of every tenth word regardless of the type of word. The second type was based on deletion of nouns and verbs only. Three exercises of each type at each reader level were prepared for a total of 57 exercises. The cloze passages were given to the pupils in an alternating order at each reader level until each pupil completed the entire set of materials from the first level through the sixth reader level.

The subjects in Schneyer's investigation were pupils in two sixth grade classes. A pretest-posttest control group design was employed. There were 32 pupils in the experimental group, which used the cloze exercises, and 34 pupils in the control group, which did not use the cloze exercises. The pupils in both classes participated in the regular reading program, using conventional basal readers. The cloze exercises were supplemental for the experimental group. An analysis of covariance showed no significant difference between the group receiving the cloze treatment and the group not receiving the cloze treatment. In the investigation correlations of .74 for vocabulary and .68 for comprehension were reported when the Gates Reading Survey was utilized. Schneyer believed, as did Bloomer (1962), that word recognition skills had to be well developed before the cloze procedure could be utilized for primary grades.
Ruddell (1965) investigated the effect of the similarity of oral and written patterns of language structure on reading comprehension of fourth grade pupils. Six reading passages were prepared for the study by using patterns of language structure in the same proportional frequency in which they occurred in the oral language of fourth grade pupils. Three of the reading passages encompassed patterns of oral language structure representing the range of high frequency patterns (e.g., "A spaceman/could fix/the small hole"). The remaining three passages used patterns of oral language structure representing the range of low frequency patterns (e.g., "The leader/gave/the men/short breaks/because they needed rest"). Cloze comprehension tests were constructed for each of the six reading passages using an every fifth word deletion formula for each of the 254 word passages.

Ruddell's comprehension cloze tests were administered to 131 fourth grade pupils. The results indicated that (1) reading comprehension is a function of the similarity of patterns of language structure in the reading material to oral patterns of language structure used by children and (2) reading comprehension scores on material that uses high frequency patterns are significantly greater than materials utilizing low frequency patterns on cloze tests. It was also concluded that cloze scores related to Stanford Reading Test scores, educational level of the parents, IQ, and the chronological age of the pupils in the study.

Faubion (1971) designed a study to measure the effect of cloze training upon the reading comprehension of 90 fourth grade pupils when the training focused upon the use of structure words and verbalizations by students concerning responses to cloze exercises. Two experimental
groups and a control group were employed with a pretest-posttest design. The treatment consisted of stratified random samples from three textbooks used to develop a series of ten cloze lessons, each containing two cloze exercises. Half of the exercises utilized the fifth word deletion pattern and half utilized a structure word deletion pattern. The results indicated no significant difference in reading comprehension between students who received training in the cloze and the students who did not receive training in the use of cloze. However, there was a significant difference in performance between students who received training in the use of cloze and the students who did not receive training.

Rynders (1971) designed a study to determine the effectiveness of several methods of developing comprehension skills. Two procedures were utilized in the study: (1) cloze materials and (2) questioning at the interpretive level. The 189 pupils were ranked in terms of pretest scores and assigned to treatment groups according to a stratified random procedure. The study procedure replaced reading instruction for a period of five weeks. Analysis of the posttest scores revealed that the cloze materials were not significantly more effective than the more traditional comprehension questioning. Also, discussion of responses to either the cloze items or the questions did not facilitate greater growth in comprehension skill. Rynders' reports that, although significant differences were not found between the treatments, the mean gain in comprehension skill was equivalent to six months of instruction. Thus, the various methods and materials used for instruction appeared equally effective.

Guscott (1971) investigated the effect of cloze procedures
on selected sixth grade pupils' ability to comprehend assigned social studies text and performance on standardized tests of reading achievement. The 60 pupils in the study were presented exercises in the form of overhead transparencies and numbered answer sheets for a treatment period of eight weeks utilizing selected social studies material. The results of a factorial analysis of variance indicated that the exercises did produce significantly better scores on the standardized tests for reading achievement but did not produce significantly better scores on the cloze comprehension test.

Rhodes (1972) designed a study to measure the effect of two experimental cloze treatments upon reading comprehension of 153 sixth grade students. A pretest-posttest control design was employed for the study. The pupils were assigned to one of three ability groups based upon their pretest scores. Within each group, the pupils were randomly assigned to one of three treatment groups: (1) noun-verb cloze deletion group; (2) every tenth word cloze deletion group; and, (3) control group. The treatment materials were 250 word cloze passages. The pupils received the treatment with practice exercises three times a week for six weeks, completing one cloze passage a session. The results of the investigation indicated that there were no significant differences among the mean criterion scores of the pupils of the three different reading abilities who received the experimental cloze treatments.

Samuel, et al., (1974) reported favorable results when utilizing a cloze type procedure with 60 mentally retarded subjects and 36 disabled third grade readers. Seven subskills of the cloze procedure were identified and specific instruction in these subskills
were provided. The results of the cloze test of comprehension for the mentally retarded indicated the superiority of the experimental subjects. The results of the cloze test for the third grade pupils indicated significantly fewer errors than the control but no difference was found between the groups given carousel word recognition training and the control. The interaction effect was not significant for the third grade subjects.

The results of the Samuel's study were discussed in terms of Guthrie's (1973) report which suggested that for good readers, reading is a unitary process, while for poor readers, the process consisted of independent subskills. The recommendation from Samuel, et al., was to extend practice for poor readers beyond accuracy to a point of automatic responses in order to move toward a unitary process. There are numerous psychomotor skills, that, through extensive training, appears to be one fluid motion, when, in fact, in teaching the skill the coach breaks it into its components. "As necessary as the integration of these subskills appear to be," states Samuel, (p. 844), "there is still an additional requirement for the development of a good reader, namely, that the skills used in reading be run off with no attention. Fluent readers are characterized by their ability to perform the necessary decoding automatically - without attention - so that their limited attention and memory capacity is left free to process meaning." Samuel concluded, "In order for the subskills to be executed as a wholistic process with out the need for attention, an extended amount of practice beyond mere accuracy is required."

In a study involving 80 third grade pupils, Kennedy and Weener (1973) reported that visual training with the cloze procedure
improves reading comprehension significantly better than auditory training with the cloze procedure. Additionally, a significant difference between the experimental (cloze) reading group and the control group, indicating that visual remediation work with the cloze procedure improved comprehension more than ordinary classroom participation with no extra remedial work. The positive effects of visual training found in this study are in agreement with the earlier research of Best (1971), who also improved the reading comprehension of under-achieving readers by training them with the cloze procedure. Kennedy and Weener concluded that "although no specific evidence was obtained to explain the observed effects, the assumption has been that the cloze procedure training resulted in an increased ability to use contextual cues in a sentence."

Beagle (1974) investigated the effect of oral and written responses on cloze tests for 45 second, 45 fourth and 45 sixth grade pupils. Six reading passages were selected, two for each grade level. The passages were of an appropriate readability level, informative in nature and approximately 300 words in length. A deletion pattern of every fifth word was utilized for one reproduction of the cloze tests and a random 10% deletion pattern was utilized for the other reproduction of the cloze tests. The students completed alternate cloze tests with oral responses and written responses. No significant differences were found between mean oral response scores and mean written responses scores at any of the three grade levels. Significant positive correlations between the response modes were found at all three grade levels. The results indicated that oral responses did not effect cloze scores.
Pugh and Neville (1974) investigated children's performance on similar cloze tests of reading and listening. In their study involving 66 pupils from age 8 to 10, the results indicated that when the pupils listened they found more difficulty than when they read, in successfully completing the cloze test. In particular, when the deleted word occurred near the beginning of a sentence they could not anticipate the word.

Additionally, Pugh and Neville (p. 230) reported that "it appears that because certain cloze tests are equivalent measures of reading comprehension, they are not necessarily equivalent tests of listening comprehension. The reason for this seems to be that in the reading test the children were able, not only to anticipate, but also to adopt a nonsequential approach and use subsequent reading information to help them fill an earlier blank. In the listening test, without this opportunity, the child was entirely dependent on the preceding information."

In concluding their study, Pugh and Neville stated that two general points arose: (1) the beginning reader may experience difficulty in using context when reading a new text, particularly when unknown words come at, or near, the beginning of a sentence; and, (2) because of the difficulties there is probably a minimum reading age below which cloze reading tasks with random deletion cease to be useful.

Paradis (1975) in a study to examine the effect of systematic instruction with cloze tasks on the reading achievement of primary grade children, administered cloze tasks in a structured setting for an eight week period. Materials for the cloze tasks were drawn from
the basal reading materials used in the pupils daily instruction.

Twenty-nine first and second grade pupils were involved in the study. The pupils ranged in reading ability from pre-primer to third reader. No pupil was experiencing severe difficulty in learning to read. A posttest only control group design was employed. The experimental group received instruction utilizing cloze tasks developed at their instructional level. The control group treatment consisted of motivated self-selected reading and activities designed to reinforce phonic skills. The results indicated that the cloze tasks, a test of word knowledge, and a standardized reading test revealed that the cloze procedure and the control treatment had equal effect on the primary grade pupils.

The cloze procedure was selected by Paradis as an instructional strategy because of the close relationship of the cloze procedure to the psycholinguistic model of the reading process. Paradis stated that a "psycholinguistic examination of reading views reading as constructive, an active process in which the reader uses cognitive and linguistic knowledge to reconstruct meaning from a graphic message."

In a successful, non-empirical study utilizing the cloze procedure to supplement basal reading program for first grade pupils, Gove (1975, p.36) stated that "teachers of beginning reading can easily incorporate the cloze procedure into on going programs. This is one means of focusing the beginning readers' attention on important aspects of reading that are often overlooked in beginning reading programs - the use of syntactic and semantic information to comprehend print."

Although not reviewed in this study, studies by Rankin (1959),
Gallant (1965) and others have shown the cloze procedure to be both a reliable and valid technique when utilized as: (1) indicators of readability levels; (2) indicators of general comprehension and vocabulary development; and, (3) indicators of instructional levels.

In summary, this review of the related literature reveals studies describing significant and non-significant differences regarding the effects of the cloze procedure on reading comprehension and/or vocabulary development. It was also found that the cloze procedure as an instructional technique in the elementary grades has been limited. Consequently, the present study was designed to provide empirical evidence regarding the effects of a modified cloze procedure on the reading comprehension and vocabulary development of elementary school pupils when utilized as an instructional technique.
CHAPTER III

RESEARCH DESIGN AND PROCEDURES

The purpose of the study was to investigate the effectiveness of a modified cloze procedure on the reading comprehension and vocabulary of second, third, and fourth grade pupils.

This chapter describes: (1) the selection of the sample, (2) the research design, (3) the instruments and procedures utilized to collect the data, (4) the procedure for the instruction of reading comprehension and vocabulary by means of a modified cloze procedure, and (5) the statistical treatment employed to analyze the data.

Sample

Two suburban elementary classrooms, consisting of 166 second, third, and fourth grade pupils from Chaparral Elementary School in Woodland Hills, California, were used in this study. Random selection of pupils was impossible due to logistical and program limitations. Hence, two intact classrooms were utilized. Each of the classrooms were team-taught with three teachers on each team. The classrooms were heterogeneous with pupils assigned by the school administration in September, 1975. The experimental and control groups were randomly selected on the basis of a coin toss.

The experimental group consisted of 82 members of which 19 second grade pupils had a mean age of 7.7 years and a mean IQ of 115.
The 33 third grade pupils had a mean age of 8.7 years and a mean IQ of 113. The 30 fourth grade pupils had a mean age of 9.5 years and a mean IQ of 107. The experimental group combined had a mean age of 8.7 years and a mean IQ of 110.

The control group consisted of 84 members of which 18 second grade pupils had a mean age of 7.6 years and a mean IQ of 117. The 40 third grade pupils had a mean age of 8.6 years and a mean IQ of 120. The 26 fourth grade pupils had a mean age of 9.7 years and a mean IQ of 111. The control group combined had a mean age of 8.7 years and a mean IQ of 116.

The pupils in the sample population were primarily Caucasian and came from a middle to upper-middle class socio-economic community.

**Design**

The Stanford Achievement Test, Form J, was administered to the experimental and control subjects on January 7, 1976 to gather pretest data. The subtest used to measure reading comprehension was 'Test 1: Paragraph Meaning'. The subtest used to measure vocabulary was 'Test 2: Word Meaning'.

Following the pretest, the experimental and control groups began the treatment phase of the study. At the conclusion of this six week treatment phase, the groups were posttested, using the Stanford Achievement Test, Form K, to measure growth during the treatment period.

**Research Instruments**

The pretest and posttest instrument utilized for this study were equivalent forms of the Stanford Achievement Test; Subtest 1:
Paragraph Meaning and Subtest 2: Word Meaning, Forms J and K, copyrighted 1952. Form J was used to gather pretest data. Form K was used to gather posttest data.

The Stanford Achievement Test was utilized because it supplied high reliability coefficients for the three grade levels involved in this study. The second grade pupils were given the Primary Battery. This battery is recommended for grades 1.9 to 3.5. The reliability coefficients for the battery for grade two are: (1) Paragraph Meaning - .956; and, (2) Word Meaning - .912.

The third grade pupils were given the Elementary Battery. This battery is recommended for grades 3.0 to 4.9. The reliability coefficients for the battery for grade three are: (1) Paragraph Meaning - .914; and, (2) Word Meaning - .909.

The fourth grade pupils were also given the Elementary Battery. The reliability coefficients for the battery for grade four are: (1) Paragraph Meaning - .898; and, (2) Word Meaning - .924.

IQ data was collected from available school records. The instrument utilized for IQ data was the Otis-Lennon Mental Ability Test.

**Research Procedure**

The treatment period for this study was six weeks beginning January 12, 1976 and concluding February 20, 1976. During that period, both the experimental group (modified cloze procedure) and the control group received instructional sessions in reading comprehension and vocabulary development. The treatment sessions were conducted three times a week on Tuesday, Wednesday, and Thursday. Each treatment
The experimental group received instruction in reading comprehension and vocabulary development via the modified cloze procedure. The appropriate instructional reading level materials for each grade level were used in this study. The second grade materials consisted of the following: (1) Bell and Howell Series - *Red Deer, the Indian Boy*; (2) The Banks Street Reader - *My City*; (3) The Banks Street Unit Readers, 4-7; (4) Basal Series, MacMillian Company and Harper-Row Company, level 2; (5) Literature Series - *Sky Blue and Peppermint Fence*; and, (6) SRA Reading Kit Ia.

Supplementing the material listed above, the third grade pupils used materials from: (1) Bell and Howell Series - *Scottie and His Friends*; (2) Basal Series, MacMillian Company and Harper-Row Company, level 3; (3) Literature Series - *Meadow Green*; and, (4) SRA Reading Kit Ib and SRA Pilot Library Kit Ic.

The fourth grade pupils used additional materials from: (1) Bell and Howell Series - *Adventure Trails*; and, (2) Basal Series, Harper-Row Company, level 4.

The cloze exercises, prepared by the investigator, were taken from the above listed materials and from the Las Virgenes Unified School District Objectives for Reading Comprehension, levels 1-4.

(Sample in Appendix)

Due to the nature of the treatment, instruction utilizing the modified cloze procedure and cloze exercises, initial material was generally below grade level for each of the experimental group's subgroups. The subgroups were instructional groupings within each grade level of the experimental group. These subgroups normally
consisted of 6 to 12 pupils. As each of the subgroups proceeded, materials became increasingly more difficult.

The modified cloze procedure was used as an instructional technique twice a week on Tuesday and Wednesday. As each of the experimental subgroups met for instruction, each pupil in the subgroup was paired with another pupil of that subgroup. The pairing was by pupil choice, however, with the limitation that a new partner must be chosen each meeting. This limitation was imposed to allow each pupil to experience other pupils of the subgroup. In addition, this negated the possibility of personal relationships interfering with the treatment process.

After the pupils were paired, a separate passage was assigned by the instructor from one of the materials appropriate to the instructional reading level of the subgroup. Only two independent passages were selected to be used at any one session. One of the passages was assigned to one partner of the pairing and the other passage was assigned to the remaining partner. Each of the passages was approximately 100 to 150 words long.

After the assignment of passages, each partner read silently the independent passage to insure familiarity and the opportunity to ask questions about the passage from the instructor. Next, each partner underlined every tenth word from the passage by placing a pencil line under the word to be unpronounced during the oral reading segment of the procedure. The every tenth word, automatic count deletion formula, as described by Culhane (1970), was used for the purpose of this study. The tenth word deletion formula allowed for enough blanks to test the pupil's comprehension and use of context
clues. Additionally, it allowed for fluency while the passage was being read orally.

After each partner had underlined every tenth word from the passage, each pair decided which of the partners would read orally to the other first. The first partner, the reader, would then read the assigned passage orally to the other partner, the listener. The reader would pause for each underlined word. The underlined word is actually printed on the page; however, a pause occurs for that underlined word. The underlined word is unpronounced in the oral reading. The reading partner would receive the unpronounced word orally from the listening partner before the pair proceeded.

While the first partner is reading orally, the second partner is listening attentively. Hence, the listening partner uses context clues to supply the unpronounced words in the passage being read orally.

In the case of an incorrect response, the reading partner would reread the sentence containing the underlined word and would again pause for the same word. If after the second rereading the listening partner was unable to supply the unpronounced word, the pair would proceed with the reader pronouncing the word.

Upon completion of the oral reading by the first partner, the second partner follows the procedure. The second partner becomes the reader, reading the assigned passage orally to the first partner. Thus, the first partner becomes the listener. At the conclusion of the reading of the second passage, the instructional session was completed. Each member of the subgroup had been the reading and listening partner.

Follow-up activities assigned during the treatment period to
the experimental subgroups consisted of reading and reporting on library books. Also, phonic skill activities were provided as well as creative writing assignments. However, direct reading comprehension, vocabulary development activities, or cloze exercises were not assigned as follow-up activities.

On the third day of each treatment week, Thursday, the procedure consisted of each pupil of the experimental subgroups completing a cloze exercise prepared by the investigator. These cloze exercises were constructed from materials appropriate for each instructional reading level. The exercises were typed with uniform blanks in place of the deleted words. Again, as in the modified cloze procedure, the every tenth word, automatic count deletion formula was used. The length of the cloze exercise passage was determined by the readability level of the pupils in each subgroup. However, the average length of second grade passages was 50 to 75 words. The third grade passages averaged 70 to 150 words. The passages for the fourth grade pupils averaged 150 to 300 words.

Each pupil, individually read the exercise silently and attempted to supply the word that was deleted using context clues provided by the remaining words. The pupils wrote the word of their choice in the blank space, attempting at all times to make a predicted word fit the context of the passage. For the purpose of this study, synonyms for deleted words were accepted since the 'exact word only' replacement can limit vocabulary development of pupils, as stated by Culhane (1970).

As a student centered learning process, the modified cloze procedure provided the pupils with a multi-skill experience. The
pupils in the experimental group were developing and being involved in decision making, silent and oral reading, listening and reading capacity skills, hearing a model, and silent reading comprehension.

Additionally, the modified cloze procedure allowed the pupils to measure their individual growth and improvement through participation and instant reinforcement from their peers. Also, the procedure allowed the pupils the opportunity to function in a leadership role.

The control group received instruction in reading comprehension and vocabulary development, using appropriate grade and instructional reading level materials, in a more traditional-basal fashion. During an instructional session of a control subgroup, the initial activity involved instructor introduction and discussion of new vocabulary. The instructor would introduce the vocabulary. Pupils in the subgroup would use the vocabulary words in a sentence or respond orally with its meaning. This vocabulary discussion was followed by the pupils reading silently and/or orally. This reading occurred during the subgroup instructional session. The instructor assigned the pages to be read in the textbook.

Instructor directed questioning followed the reading activity. This questioning was generally on the 'recall level', however, some higher level questioning was involved. This questioning was achieved orally in the subgroup session and was primarily directed by the instructor.

To conclude the session, a skill lesson was given by the instructor. This was followed by the assignment of written follow-up activities from basal workbooks, district objectives or teacher made
materials. Many times the follow-up activities included reading comprehension and vocabulary exercises.

The materials used by the second grade pupils of the control group were primarily: (1) Basal Series, MacMillian Company and Harper-Row Company, level 2 with series workbooks; and, (2) SRA Reading Kit 1a.

The third grade pupils used primarily the materials from: (1) Basal Series, MacMillian Company and Harper-Row Company, level 3 with series workbooks; and, (2) SRA Reading Kit 1b.

The primary materials used by the fourth grade pupils consisted of: (1) Basal Series, Harper-Row Company, level 4 with series workbooks; and, (2) SRA Reading Kit 1b. Additionally, all subgroups of the control group utilized the Las Virgenes Unified School District Objectives for Reading Comprehension, levels 2-4.

At no time did the investigator dictate materials to be used or procedures to the control group. The only limitation was that the cloze procedure not be used.

At the conclusion of the third week of the treatment period, an evolution of the modified cloze procedure occurred for the experimental group. The modified cloze procedure was adjusted to include additional cloze exercises. These cloze exercises were used as follow-up activities at the completion of an instructional session. Again, the exercises were constructed from materials appropriate to the instructional reading level of each experimental subgroup. These exercises also presented themselves as natural vocabulary learning experiences.

As suggested by Culhane (1970), the treatment procedure was
adjusted to accommodate a discussion following the completion of the cloze exercises. This enabled the pupils to express reasons for their word choices and enabled the instructor to assist pupils to extend their use of vocabulary in a variety of different situations.

This adjusted treatment procedure maintained the qualities favorable to increase reading comprehension via the modified cloze procedure and the use of cloze exercises. In addition, it appeared to strengthen the vocabulary development aspect of the treatment procedure by allowing discussion and instruction in the area of vocabulary usage.

**Data Collection**

The pretest data was collected January 7, 1976 and the posttest data was collected February 26, 1976. The investigator collected the data at Chaparral Elementary School in Woodland Hills, California. The resulting data were scored and interpreted by the investigator.

**Statistical Analysis**

An analysis of covariance was applied with multiple covariates in relationship to (1) grade; (2) IQ; and, (3) pretest and posttest reading comprehension and vocabulary scores. The level of significance necessary to reject the null hypotheses was set at the .05 level.
CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

This chapter explains the statistical procedure used, presents that data and analyzes the results of the study.

Treatment of the Data

An analysis of covariance was applied to test the hypotheses with covariates by grade level in relationship to (1) pretest scores; (2) IQ; and, (3) posttest scores. In each instance, the level of significance necessary to reject the null hypotheses was set at the .05 level. Each hypothesis was treated independently. When the \( F \) ratio was found to be significant for a given hypothesis, the null hypothesis was rejected. When the \( F \) ratio was not significant, the null hypothesis was not rejected. An abbreviated n.s. was used to indicate non-significance.

Presentation of the Data

Hypothesis 1

The null hypothesis stated that there would be no significant difference between the second grade experimental group (modified cloze procedure) and the control group in the reading comprehension posttest mean scores as measured by the Stanford Achievement Test. The statistical data in Table 1 (page 33) present the results of the
analysis of covariance and $F$ test.

There was not a significant difference between the posttest mean scores of the experimental and control groups. Therefore, the null hypothesis was not rejected.

**Hypothesis 2**

The null hypothesis stated that there would be no significant difference between the second grade experimental group and the control group in the vocabulary posttest mean scores as measured by the Stanford Achievement Test. The statistical data in Table 2 (page 34) present the results of the analysis of covariance and $F$ test.

There was not a significant difference between the posttest mean scores of the experimental and control groups. Hence, the null hypothesis was not rejected.

**Hypothesis 3**

The null hypothesis stated that there would be no significant difference between the third grade experimental group and the control group in the reading comprehension posttest mean scores as measured by the Stanford Achievement Test. The statistical data in Table 3 (page 35) present the results of the analysis of covariance and $F$ test.

There was not a significant difference between the posttest mean scores of the experimental and control groups. Consequently, the null hypothesis was not rejected.

**Hypothesis 4**

The null hypothesis stated that there would be no significant difference between the fourth grade experimental group and the control
group in the vocabulary posttest mean scores as measured by the Stanford Achievement Test. The statistical data in Table 4 (page 36) present the results of the analysis of covariance and F test.

There was not a significant difference between the posttest mean scores of the experimental and control groups. Therefore, the null hypothesis was not rejected.

Hypothesis 5

The null hypothesis stated that there would be no significant difference between the fourth grade experimental group and the control group in the reading comprehension posttest mean scores as measured by the Stanford Achievement Test. The statistical data in Table 5 (page 37) present the results of the analysis of covariance and F test.

There was not a significant difference between the posttest mean scores of the experimental and control groups. Hence, the null hypothesis was not rejected.

Hypothesis 6

The null hypothesis stated that there would be no significant difference between the fourth grade experimental group and the control group in the vocabulary posttest mean scores as measured by the Stanford Achievement Test. The statistical data in Table 6 (page 38) present the results of the analysis of covariance and F test.

There was not a significant difference between the posttest mean scores of the experimental and control groups. Consequently, the null hypothesis was not rejected.

The data presented in Table 7 (page 39) displays the reading comprehension and vocabulary mean scores, adjusted mean scores and
standard errors for the experimental group (modified cloze procedure) and the control group as derived by the analysis of covariance.
## TABLE 1

**ANALYSIS OF COVARIANCE TABLE FOR SECOND GRADE READING COMPREHENSION**

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<tr>
<th>SOURCE</th>
<th>DF</th>
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<th>SUM-SQUARES (ABOUT)</th>
<th>DF</th>
<th>MEAN-SQUARE</th>
<th>F</th>
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<td>ERROR (WITHIN)</td>
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<td>1434.9357</td>
<td>963.8275</td>
<td>471.1082</td>
<td>33</td>
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</tr>
<tr>
<td>TREATMENT + ERROR (TOTAL)</td>
<td>36</td>
<td>1446.1081</td>
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<td>(n.s.)</td>
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\( F \ 0.05 (1,33) = 4.140 \)
# TABLE 2

ANALYSIS OF COVARIANCE TABLE FOR SECOND GRADE VOCABULARY

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<th>SOURCE</th>
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<td>15.6372</td>
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F 0.05 (1,33) = 4.140
TABLE 3

ANALYSIS OF COVARIANCE TABLE FOR THIRD GRADE READING COMPREHENSION

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<td>ERROR (WITHIN)</td>
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<td>3145.3333</td>
<td>2029.5959</td>
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F 0.05 (1,69) = 3.98
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<th>DF</th>
<th>MEAN-SQUARE</th>
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<td>TREATMENT + ERROR</td>
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F 0.05 (1,69) = 3.98
TABLE 5
ANALYSIS OF COVARIANCE TABLE FOR FOURTH GRADE READING COMPREHENSION

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<th>SUM-SQUARES (ABOUT)</th>
<th>DF</th>
<th>MEAN-SQUARE</th>
<th>F</th>
</tr>
</thead>
<tbody>
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<tr>
<td>ERROR (WITHIN)</td>
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<td>723.8806</td>
<td>52</td>
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<tr>
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DF 0.05 (1, 52) = 4.025
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<td>+ ERROR</td>
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F 0.05 (1,52) = 4.025
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<tr>
<td></td>
<td>Second Grade</td>
<td>Third Grade</td>
<td>Fourth Grade</td>
<td>Second Grade</td>
</tr>
<tr>
<td>R</td>
<td>36.78</td>
<td>29.63</td>
<td>33.33</td>
<td>28.42</td>
</tr>
<tr>
<td>V</td>
<td>37.93</td>
<td>30.65</td>
<td>34.94</td>
<td>29.55</td>
</tr>
<tr>
<td>AM</td>
<td>37.93</td>
<td>30.65</td>
<td>34.94</td>
<td>29.55</td>
</tr>
<tr>
<td>SE</td>
<td>.88</td>
<td>.89</td>
<td>.71</td>
<td>.54</td>
</tr>
<tr>
<td></td>
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R = Reading Comprehension  
V = Vocabulary  
TM = Treatment Mean  
AM = Adjusted Mean  
SE = Standard Error Adjusted
CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study investigated the effectiveness of a modified cloze procedure, utilized as an instructional technique, on the reading comprehension and vocabulary development of second, third, and fourth grade pupils.

The study was based on the premises that: (1) the modified cloze procedure, utilized as an instructional technique, would improve children's reading comprehension; and, (2) the modified cloze procedure would improve children's vocabulary development. Factors which lent significance to the study included the need to provide educators with (1) empirical evidence in the form of objective data regarding the effects of a modified cloze procedure on reading comprehension and vocabulary; (2) empirical evidence as to whether a modified cloze procedure can be utilized as an effective means of improving reading comprehension and vocabulary development; (3) verification or nullification of assumptions and claims made in non-empirical investigations concerned with cloze procedure and reading comprehension and vocabulary development; (4) a model describing the implementation of the modified cloze procedure in instructing reading comprehension and vocabulary development; and, (5) conclusions that either substantiate or negate the merits and practicality of classroom utilization of a modified
The cloze procedure as an effective instructional device.

The subjects were 166 second, third, and fourth grade pupils from two suburban elementary classrooms. The subjects were primarily Caucasian and from a middle to upper-middle class socio-economic community.

A pretest-posttest design was employed in this study. The Stanford Achievement Test, subtests 1 (Paragraph Meaning) and 2 (Word Meaning), was utilized to measure reading comprehension and vocabulary scores. The pretests were administered in January of 1976. The posttests were administered at the completion of the six week treatment period in February of 1976.

An analysis of covariance was applied to test the hypotheses with covariates by grade level in relationship to (1) pretest scores; (2) IQ; and, (3) posttest scores. In each instance, the level of significance necessary to reject the null hypotheses was set at the .05 level. Each hypothesis was treated independently.

Null Hypothesis 1 was not rejected. There was no significant difference in the reading comprehension posttest mean scores between the second grade experimental group and control group as measured by the Stanford Achievement Test. The subjects that participated in the modified cloze procedure did not outperform the control subjects.

Null Hypothesis 2 was not rejected. There was no significant difference in the vocabulary posttest mean scores between the second grade experimental group and the control group as measured by the Stanford Achievement Test. The subjects that participated in the modified cloze procedure did not outperform the control subjects.

Null Hypothesis 3 was not rejected. There was no significant...
difference in the reading comprehension posttest mean scores between the third grade experimental group and the control group as measured by the Stanford Achievement Test. The subjects that participated in the modified cloze procedure did not outperform the control subjects.

Null Hypothesis 4 was not rejected. There was no significant difference in the vocabulary posttest mean scores between the third grade experimental group and the control group as measured by the Stanford Achievement Test. The subjects that participated in the modified cloze procedure did not outperform the control subjects.

Null Hypothesis 5 was not rejected. There was no significant difference in the reading comprehension posttest mean scores between the fourth grade experimental group and the control group as measured by the Stanford Achievement Test. The subjects that participated in the modified cloze procedure did not outperform the control subjects.

Null Hypothesis 6 was not rejected. There was no significant difference in the vocabulary posttest mean scores between the fourth grade experimental group and the control group as measured by the Stanford Achievement Test. The subjects that participated in the modified cloze procedure did not outperform the control subjects.

Conclusions

The findings of the study indicated that the experimental subjects participating in the modified cloze procedure did not significantly outperform the control subjects who received traditional-basal classroom reading instruction. The results applied to both reading comprehension and vocabulary development.

Two possible explanations are offered. First, six weeks may
be insufficient time for significant gains in reading comprehension and vocabulary development. Second, the experimental group of subjects and the control group of subjects both achieved significant pretest-posttest mean gain scores for the six week study period. Thus, the traditional-basal classroom reading instruction seemed to be just as effective as the modified cloze procedure in producing reading gains for second, third, and fourth grade pupils in reading comprehension and vocabulary development.

However, the modified cloze procedure appeared to produce affective growth. This was indicated by the experimental group's interest and increased willingness to participate in the instructional sessions. The subjects' attitudes toward reading also appeared to improve as did their confidence in this 'active reader' technique.

**Recommendations for Further Research**

In view of the findings of the present study, the following areas are recommended for further study.

First, different reading and vocabulary instruments could be used other than the Stanford Achievement Test. A different instrument might have measured the effects of the modified cloze procedure differently as many standardized tests utilize a modified cloze technique to measure reading comprehension and vocabulary.

Second, a series of follow-up studies or longitudinal study could be undertaken to observe if the measured changes were lasting in effect and if other mean scores gained significantly.

Third, a study could be designed and conducted in an attempt to determine what the effects would be when comparing the attitude
differences.

Fourth, a study could be designed and conducted which employed the utilization of cloze passages as an instructional technique.

Fifth, a study could be designed and conducted which incorporated other grade levels.

Sixth, a study could be designed and conducted which attempts to determine what effects a cloze procedure technique has on attitudes towards reading.


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APPENDIX

SAMPLE OF CLOZE EXERCISE
One morning Seatook woke very early. This was the time that he was going seal hunting. His father had dug a seal's breathing hole and promised to take him on the hunt.

Seals are good underwater swimmers, but they must have air to breathe. In the Fall when the sea begins to freeze, the seals break through the ice and make breathing holes. Because the seals use the holes often, the ice never gets too thick. The can break the thin coating of ice with a push of its nose.

Seatook helped his father build a wall of ice and snow around three sides of breathing hole. Seatook crouched behind the wall to protect himself from the sharp wind. Father stood close to the edge of the hole, holding the harpoon in his right hand.

They waited quietly for hours. The boy did not his eyes away from the thin coating of ice covered the breathing hole. Suddenly he saw the dark of a seal through the thin ice. He glanced his father who held his harpoon ready. Just as a seal broke through the ice, Seatook's father harpooned it. and his father were happy because the seal would their family meat, fur and oil.