

THE DETERMINATION OF READING INSTRUCTIONAL
LEVEL OF DISABLED FOURTH GRADE READERS
UTILIZING CLOZE TESTING PROCEDURE

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Submitted to the Faculty of the
Graduate College of the
Oklahoma State University
in partial fulfillment of
the requirements for
the Degree of
DOCTOR OF EDUCATION
August, 1969

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ACKNOWLEDGMENTS

This writer wishes to express her sincere appreciation and gratitude to Dr. Idella Lohman, chairman of the doctoral committee for her continual guidance, encouragement, patience, and many constructive criticisms during the preparation and development of this study.

A special acknowledgment is given to Dr. Donald Denum who offered many valuable suggestions and gave so generously of his time in the completion of the statistical part of the investigation. Appreciation is also extended to Dr. Bernard Belden, Dr. Darrel Ray, and Dr. Walter Scott, who as members of the committee, gave suggestions, criticisms, and encouragement during the period of graduate study.

The assistance and cooperation of the administrators, teachers, and children in thirty-four participating schools in Kay County are gratefully acknowledged.

And finally, it is with special gratitude and appreciation that the author acknowledges the Administration of Southwestern State College and particularly Dr. Louis Morris, Dr. W. C. Burris, and Dean Bob Brown for their understanding, patience, and support during the completion of the doctoral dissertation. Gratitude is also extended to Dr. Charlotte Lam and Dr. Ruby Drinkwater of the faculty.

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CHAPTER I

THE NATURE OF THE PROBLEM

Introduction

This study is concerned with the feasibility of utilizing cloze tests as a measure for determining the instructional levels of disabled readers in the elementary schools. Cloze research has been concerned with various aspects of reading for the general school population from primary grades through adult education, though largely with older students. There is no study specifically concerned with cloze procedure as a measurement of instructional level placement for disabled readers.

General Background of the Study

Since the technique of cloze procedure was developed in 1953 by Wilson L. Taylor (29), research has utilized the technique for a variety of purposes. Correlations between cloze tests and standardized reading tests establish the concurrent validity of cloze tests as measures of general reading achievement. With the exception of one study all other comparisons between cloze tests and standardized reading tests of comprehension have yielded substantial correlations even though the cloze tests were based upon a variety of different types of reading materials and were constructed and administered in different ways.

The concurrent validity of cloze procedure as a measure of specific reading comprehension has been determined by correlation cloze

test results with scores on standardized silent reading comprehension tests covering the same material as the cloze test. Taylor's research found the cloze procedure to be a highly valid measure of the specific comprehension of a particular message. In fact, it is a more accurate measure of specific comprehension than of general reading skill as measured by standardized tests of reading comprehension.

Statement of Objective

The purpose of this investigation is to determine whether or not cloze testing is a valid procedure for determining reading instructional levels for disabled readers in the fourth grade.

Need for the Study

The ever-present anathema of teachers of reading is a means of accurately and expeditiously determining the instructional reading levels of those children in their charge. Standardized reading achievement tests and informal reading inventories are the instruments usually used by classroom teachers for determining the instructional level. Reading achievement tests frequently misclassify the instructional level. Research has shown that an informal reading inventory, correctly administered, is a more accurate measure than the reading achievement tests; however, this procedure is extremely time consuming and its interpretation is dependent upon the skills and biases of the teacher.

The instructional level for disabled readers needs particularly to be determined quickly and early in the school year. "Frustration will produce a decrease in the quality of ongoing performance, to the extent

that the frustration evokes other responses which interfere with that ongoing performance." (32) Neither the pupil nor the teacher should suffer from the inherent behavioral patterns that result from continued negative frustrations.

Should cloze testing prove to be a valid procedure for disabled readers, many classroom organizational and instructional problems would be eliminated. Reading instruction could conceivably proceed from the first week of the school year with children not suffering from inadvertent placement at incorrect reading instructional level.

Assumptions

1. Readability formulas may be utilized to determine accurately the reading grade level of a given passage.

2. Appropriate interpretation of Standardized Reading Survey tests, Informal Reading Inventories, and Cloze tests will ascertain reading achievement levels.

3. Criteria can be utilized to estimate grade level scores from Cloze test raw scores.

Hypotheses

H_{01} : Cloze procedure, as a clinical psychometric device will correctly categorize the restricted membership of fourth grade readers into the retarded (3.5 and above) and the disabled (below 3.5) reading instructional classifications. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

Ho₂: The Cloze Test as a clinical psychometric device will correctly classify specific members of the total membership of fourth grade disabled readers into the 3.0 - 3.4 grade level instructional category. The base rate of this subpopulation, $P > Q$, requires that the inequality $P < \frac{q_2}{q_2 + q_1}$ hold to demonstrate practical efficiency.

Ho₃: The Cloze Test as a clinical psychometric device will correctly classify specific members of the total membership of fourth grade disabled readers into the 2.0 - 2.4 grade level instructional category. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{p_1}{p_1 + p_2}$ hold to demonstrate practical efficiency.

Ho₄: The Cloze Test as a clinical psychometric device will correctly classify specific members of the total membership of fourth grade disabled readers into the 1.5 - 1.9 grade level instructional category. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{p_1}{p_1 + p_2}$ hold to demonstrate practical efficiency.

Ho₅: A Standardized Reading Comprehension Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 3.0 - 3.4 grade level instructional category. The base rate of this subpopulation, $P > Q$, requires that the inequality $P < \frac{q_2}{q_2 + q_1}$ hold to demonstrate practical efficiency.

Ho₆: A Standardized Reading Comprehension Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 2.0 - 2.4 grade level instructional category. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{p_1}{p_1 + p_2}$ hold to demonstrate practical efficiency.

Ho₇: A Standardized Reading Comprehension Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 1.5 - 1.9 grade level instructional category. The base rate of the subpopulation, $P < Q$, requires that the inequality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

Ho₈: A Standardized Word Meaning Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 3.0 - 3.4 grade level instructional category. The base rate of this subpopulation, $P > Q$, requires that the inequality $P < \frac{q_2 + q_1}{q_2 + q_1}$ hold to demonstrate practical efficiency.

Ho₉: A Standardized Word Meaning Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 2.0 - 2.4 grade level instructional category. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

The Analysis Rationale

In this study, for each analysis, a subpopulation will be defined in terms of its total membership, the classification categories of experimental concern within the subpopulation and the base rates established for these classification categories by a criterion instrument.

In this type of analysis, the concern is with maximizing total hits, i.e., correct classification. Within this frame of reference, maximizing total hits is always equivalent to maximizing the hit rate for either type of decision or minimizing the errors of either, or both,

kinds, since cases shifted from one cell of the table have to be exactly compensated for. If m "good" cases that were correctly classified by one decision method are incorrectly classified by another, maintenance of the selection ratio entails that " m " cases correctly classed "poor" are also miscalled "good" by the new method. In other words, for every case incorrectly placed, there must be another incorrect compensatory case.

The practical value of a psychometric sign, pattern, or cutting-score depends jointly upon its intrinsic validity (in the usual sense of its discriminatory power) and the distribution of the criterion variable (base rates) in the clinical population.

Specific Statement of the Problem

This is a study of a Cloze instrument designed to measure the reading level of fourth grade disabled readers for the purpose of determining a reading instructional level.

Definition of Terms

1. Cloze Procedure: Cloze procedure is the random deletion of a portion of words in a passage, the replacement of deleted words with a blank of uniform length, with instructions to the subject to write in the word that best fits the context of that passage.
2. Cloze Test: The Cloze Test is a silent reading exercise designed for group testing and consists of three passages, each approximately 200 words in length, written on a specific readability level for grades 2.0, 2.5, and 3.0 in which every tenth word has been deleted and the deletion replaced with a blank line uniformly

twenty typewritten spaces in length. The subject writes the word he thinks best fits the context and the test is scored on the basis of the total number of words supplied that exactly match the words in the unmutilated passage.

3. Cloze Response: The Cloze response is the word selected by the reader to fill in the blank found within a Cloze test.
4. Readability: Readability is the relative difficulty of reading materials as has been determined by applying an accepted formula to samples of reading materials. Readability is also that passage that is read and comprehended by the reader.
5. General Reading Achievement: Refers to reading skill as measured by Standardized Reading Achievement tests.
6. Disabled Readers: The disabled reader is the subject whose reading skills have been measured to be one and one-half to two years below grade level.
7. Retarded Readers: The retarded reader is the subject whose reading skills have been measured to be one year or less below grade level.
8. Informal Reading Inventory: An informal reading inventory consists of selections taken from carefully graded material or from a series of basal readers and placed together to form an oral-silent reading evaluation instrument. Performance is determined by the teacher as the child reads orally and silently. The teacher works with the child individually and notes accuracy of oral reading and the degree of comprehension as the child reads and discusses selections, progressing from easy to more difficult levels. Identifiable levels of reading competency are ascertained by this method.

9. Standardized Informal Reading Inventory: The design and procedure of the standardized informal reading inventory is the same as the above except the reading selections and evaluation procedures have been standardized.
10. The Stanford Achievement Test, Form W, Primary Battery II: The reading subtests of this battery, Word Meaning and Comprehension, measure reading achievement as based on standardized grade level norms.
11. The McCracken Standard Reading Inventory: This test is a standardized informal reading inventory that is structured to ascertain both oral and silent reading grade level competencies of the individual student.
12. Spache Readability Formula: A widely accepted formula and procedure devised to measure the reading grade level of primary reading materials.

Delimitations of the Study

This study was delimited by the lack of consensus of the determiners of reading comprehension. It was also delimited to the specific instruments used in the testing situation and to the population used in this particular research. Additional delimitations occur insofar as the capabilities of the administrators of the test and testing conditions influenced the study.

CHAPTER II

REVIEW OF SELECTED LITERATURE

Introduction

Every teacher must find a means of determining quickly and often what reading materials should be used for instruction. The procedures vary from school to school and from teacher to teacher. Standardized achievement tests, standardized diagnostic reading tests administered individually or to an entire group, and informal reading inventories are the broad classifications of methods used to determine the instructional levels within a classroom.

Cloze technique has only recently been implemented, usually on an experimental basis for elementary school children. The procedure has not been used with disabled readers per se. Inasmuch as these tests may easily be constructed by the classroom teacher and administered simultaneously or individually, it would seem expedient to determine whether or not cloze procedure is a valid measure for fourth grade pupils who are disabled readers.

The review of the literature related to the problem has been classified under four headings: (1) Reading Comprehension, (2) Methods of Measurement, (3) Rationale and Utility of Cloze Procedure, and (4) Selected Related Cloze Procedure Research.

Reading Comprehension

Comprehension cannot be separated from reading. It is composed of many broad facets such as intelligence, experience, language facility, vocabulary, word attack skills, concepts and percepts, all of which have an inseparable, interrelated part in the ability of the individual child to learn to read.

Cleland's (11) definition seems most concise and pertinent from the wealth of descriptions of comprehension in the literature of reading. "Comprehension--a central mental activity involving the higher intellectual processes, in which there is an reorganization of experiences relevant to the purpose of the reading, these experiences having been evoked by the linguistic symbols we call words." He also thinks of reading comprehension as a gestalt because from the configuration of main and supporting ideas, a meaning emerges.

Bond and Tinker (6) in a discussion of comprehension state that

. . . basically, comprehension depends upon facility in the use of concepts or meanings evolved through experience. To be of use in reading, the concepts acquired through experience must be attached to words or groups of words as symbols of their meaning. Such words become a part of one's own understanding and speaking vocabulary.

There has been no universally accepted definition of comprehension. Each authority in the field of reading formulates his own from either a theoretical or skills frame of reference. The only consensus is that a child must understand what he reads in order to be reading. Cleland (11) summarized some of Schoeller's conclusions from his study of reading comprehension:

1. Comprehension improves gradually and steadily in normal pupils from first grade through college.

2. Ability to organize what has been learned through reading develops with maturation.
3. In the upper grades, comprehension increases faster than the speed of reading.
4. A developmental reading program based on the concept of child growth and development is supported by these conclusions.
5. Because it describes how a reader obtains a configuration of the main and supporting ideas of what is gleaned from the printed page, gestalt psychology appears to explain the reading process better than does bond psychology.
6. The majority of the evidence points out that comprehension can be improved better through a stimulation of central factors than through stimulation of peripheral factors.
7. Without accurate concepts of the words involved, a person will comprehend little or nothing of what he reads.
8. There is continuous development of concepts as a child matures and his experience widens.
9. The number of concepts which a person knows is less important to his ability to comprehend than the accuracy, clarity, and organization of these concepts.
10. Sufficient experiences and opportunity must be provided so that they can form clear, accurate, well-organized concepts about the things they are learning.

Smith (26) drew up a two-dimensional model to explain the functioning of intelligence in reading, though he did not continue with an explanation of how these various intellectual processes are exemplified in various reading behaviors. The five broad areas of his model are cognition, memory, divergent production, convergent production, and evaluation. Each area was further subdivided by the unit (word), class (sentence), systems (between sentences), transformations (manipulation of paragraphs), and implications (inferential reactions to paragraphs).

A hierarchy of levels of difficulty of the facts and relationships obtained by comprehension has been identified by Letton (20). These levels and illustrative types of items are:

1. Factual--recall or recognition of stated details, finding specific details.
2. Reorganization--recognizing or stating the main idea, summarizing the central thought, outlining the given facts, classifying ideas.
3. Inferential--anticipating outcomes, drawing conclusions or inferences, recognizing sequence of related ideas, recognizing implied details, perceiving relations (cause-effect, time, size, part-whole, etc.)
4. Interpretive--recognizing and interpreting figurative language, recognizing connotation and denotation of words, forming sensory impressions, interpreting idiomatic language, reacting to tone and mood.
5. Evaluative--comparing and contrasting concepts with own experience and various sources, distinguishing between fact and opinion, eliciting generalizations, making judgments about the author's purpose and veracity, recognizing propaganda techniques, reacting to author's style.

Emerald Dechant (14) emphasizes the complexity of the process of acquiring the meaning intended by the author. In fact, he says,

The goal of all reading is the comprehension of meaning. The initial step in this process . . . is the association of an experience with a given symbol. This is absolutely necessary, but it is the most elemental form of comprehension. Complete meaning is not conveyed by a single word. The good reader learns to interpret words in their conceptual setting. He comprehends words as parts of sentences, sentences as parts of paragraphs, and paragraphs as part of stories.

Meaningful reading includes not only a literal interpretation of an author's words, but also an interpretation of his mood, tone, feeling and attitude. The reader must comprehend the implied meanings and prejudices of the writer. He must recognize summary statements, make inferences and applications, and see the broader implications of a passage. He must familiarize himself with the time and place in which the words were written. He must use the periods, commas, quotation marks, and questions as aids to interpretation.

The five basic aspects of reading comprehension involved in all reading of stories and descriptive materials are listed by Bond and Tinker (6) as: (1) various methods of acquiring word meanings such as experience, context clues, enrichment of meaning through descriptive words, figures of speech and symbolic expressions, the noting of semantic variations, and word study, (2) phrasing into thought units, (3) sentence comprehension, (4) paragraph meaning and organization, and (5) story organization and story sense.

In an extensive study by Davis (12), reported more fully under the subtitle Measurement of Comprehension, six skills are listed as: (1) Remembering word meanings, (2) Inferring word meaning from context, (3) Understanding content stated explicitly, (4) Weaving ideas in the content, (5) Identifying the author's literary techniques, (6) Following the structure of the content. These are essentially the same comprehension skills as defined by Davis (13) in 1941.

Goodman (18) offers yet another definition and says that reading is a psycholinguistic guessing game.

Reading is a selecting process. It involves partial use of available minimal language clues selected from perceptual input on the basis of the reader's expectation. As this partial information is processed, tentative decisions are made to be confirmed, rejected or refined as reading progresses.

He goes on to explain his theory more explicitly as

Efficient reading does not result from precise perception and identification of all elements, but from skill in selecting the fewest, most productive cues necessary to produce guesses which are right the first time. The ability to anticipate that which has not been seen, of course, is vital in reading, just as the ability to anticipate what has not yet been heard is vital in listening.

The writer suggests that the inability of researchers to get inside the mind of their subject to know what really happens when one

reads has led to the wealth of theories in the literature concerning comprehension. There is general agreement that experience and intelligence play a major role, both of which pose perplexing problems for measurement. Vocabulary is rarely omitted from the lists of factors contributing to comprehension. However, vocabulary is often regional or cultural and one child's vocabulary may encompass approximately the same experiential symbols (words) as another's, though the symbols may be different. Writers in the field of reading comprehension agree on broad areas and there is much overlapping. Reading comprehension tests reflect the divergence of theory which in turn is reflected in the classroom. Until such time as we are more certain of the measurable factors of comprehension, teachers will find it difficult to select and evaluate tests.

Methods of Measuring Reading Comprehension

Classroom teachers and reading specialists administer formal reading tests to identify the range of differences in reading abilities within their classes and to determine the general achievement level of each class member. They use diagnostic reading tests to analyze precisely a pupil's strong and weak areas. School administrators as well as teachers give survey tests to evaluate pupil's progress in reading.

According to Spache (28), current reading tests do not actually measure the process of comprehending. Instead, they deal with the end results of the reasoning process, the types of facts that the reader understands. "It is not known how he has obtained the inferences or conclusions he offers, whether by faulty or sound logic, by intuition

or insight, or by sheer guess." He cautions teachers not to interpret a test as an intensive and complete analysis of the pupil's comprehension, particularly if the test appears to measure several aspects of comprehension by means of sub-tests or scores. "Any measure of comprehension can only sample a few of the facts or concepts that a reader has grasped and are only a cursory sampling of the outcomes of the process of comprehension." Furthermore, he insists that it is dangerous to assume that the reader will show the same degree or type of comprehension in all content fields from the result of a single test.

Inasmuch as there is no universally accepted hierarchy of kinds of reasoning nor even the components of comprehension in the mental processes of reading, it is impossible at this time to assign degrees of difficulty in tests of comprehension. It is not known whether it is intellectually more difficult to recognize implied details or main ideas, to comprehend cause and effect relationships or to draw inferences of various types. It also is not known with any degree of accuracy the mental levels at which various types of thinking should appear or should have matured. Perhaps Bloom's (5) hierarchy of the cognitive domain is the most logical and widely accepted, though he makes no delineation as to maturity of each level. These levels of cognition are knowledge, comprehension, application, analysis, synthesis and evaluation. In this hierarchy, comprehension "represents the lowest level of understanding. It refers to a type of understanding or apprehension such that the individual knows what is being communicated and can make use of the material or idea being communicated without necessarily relating it to other material or seeing it in its full-

est implications." Comprehension is, however, subdivided into translation, interpretation and extrapolation.

Standardized Survey Tests

The survey test gives an over-all view of reading growth and may be of a single or multiple type, depending upon the goals of instruction they check. The single type may sample only for word recognition or comprehension, while the multiple type may sample vocabulary, comprehension and speed. In addition, reading tests may require oral or silent responses.

Betts (4) claims that the standardized survey tests frequently rate children from one to four grades above their actual achievement level. He also cautions against using standardized measures as the sole criterion for assessing a particular pupil's reading level.

The investigation by Botel (10) of the relationship between the standardized and informal estimates of reading among 1400 pupils in grades two through six found:

	Overrated	Rated Properly	Underrated
Grade 2	85% 1 - 5 levels	11%	4% 1 - 2 levels
Grade 3	68% 1 - 5 levels	17%	15% 1 - 3 levels
Intermediate	33% 1 - 5 levels	33%	33%

Pleassas (21) gives a possible explanation for the high percentage of pupils who were overrated. An examination of the test revealed that most of them were extremely limited and indiscriminate. A second factor he thought contributed was that "most reading tests do not evaluate adequately the higher creative processes involving thoughtful reactions and appreciative responses to the printed ideas." He found that the majority of existing tests emphasize the measurement of word meanings and limited comprehension skills such as reading to note

supporting details or main ideas. His third reason: "Most survey reading tests consist of vocabulary and comprehension sections in which the subject usually defines words by selecting synonyms from a group or reads graded passages to answer questions from a list of choices." He suggests that the arrangement for selecting answers in such comprehension tests may unintentionally aid the subject in advancing his reading achievement score beyond his actual instructional level. In actual practice reading demands that the reader associate words and their meanings or react to ideas without reference to carefully worded choices. Plessas also considers time as factor because it would prompt the reader to perform in a manner unlike that required in normal reading activities.

In an informal investigation of eleven reading improvement workbooks purported to evaluate comprehension, Atwater (1) made some related conclusions. Most of the authors were in agreement on these areas of comprehension: perceiving main ideas, making larger inferences from the material presented, and interpretation of ideas. She found that though these were the stated objectives to be measured, "On an average, the tests included from one to three such questions out of ten, the remaining seven to nine asking for recall of factual information." In every case, if the student answered seven to nine questions correctly he would receive a high or satisfactory comprehension score.

Davis (12), as referred to previously, made an extensive study with 988 twelfth grade pupils to estimate the per cent of nonchance variance of each of the eight aforementioned important comprehension skills. Forty multiple-choice items, each based on a separate passage,

were used to measure each skill. Uniqueness analyses were then performed, cross-validated by items and separately, by examinees. He found surprisingly large percentages of unique non-chance variance, especially in scores measuring memory for word meanings and drawing inferences from the content. Davis interpreted this to mean that reading among mature readers is not a unitary trait and, thus, should be taught as separate entities.

Standardized Diagnostic Tests

The diagnostic or analytical tests are becoming more widely used by the classroom teacher as they become more knowledgeable about diagnosing reading deficiencies and teaching children to read. In this setting, the diagnostic test is usually a silent reading test administered either to an individual or, more often, to an entire group. These tests measure several aspects of word recognition skills which vary with each test. A few of the diagnostic tests also include general and specific comprehension subtests and scores. These tests usually require two or three hours to administer and the cost is prohibitive for many school systems.

The Informal Reading Inventory

An informal reading inventory may be composed by the teacher, provided the teacher carefully adheres to a readability formula in order to establish the level of the passage. More commonly, the inventory consists of selections taken from carefully graded materials or from a series of basal readers and placed together to form an oral-silent reading evaluation instrument. Selections of 100 to 150 words are

chosen from each successive book in the series. For any grade level, material should be selected about twenty pages from the beginning first book at that grade. Similarly, for half-way through a grade, material should be selected near the beginning of the second book for that grade.

Informal reading inventories are informal in that they are not usually standardized, although they are accepted as valid (3). Performance is determined by the teacher as the child reads the selections aloud. The teacher works with the child individually and notes his accuracy of pronunciation and the degree of comprehension. The child then discusses the selections which progress from easy to more difficult levels. Identifiable levels of reading competency are ascertained by this method.

The criteria for the three levels have been rather well agreed upon as the following, though the percentages may vary slightly: Independent --no more than one error in each 100 words and a comprehension score of at least 90 per cent. The instructional level -- that passage the child can read with no more than one word recognition error in each twenty words and has a comprehension score of at least seventy-five per cent. The frustration level is largely determined by behaviors such as the word itself suggests.

According to Bond-Tinker (6) the usefulness of the information obtained by this procedure depends upon the experience of the observer, the number of observations made, the degree to which the sample of observations is unbiased, and the relevance of the information to the understanding of the case.

Betts (2) has given three important clues in using an Informal Reading Inventory:

1. The teacher is given direct evidence on achievement and needs in terms of available instructional material.
2. The teacher is provided with a technique for detecting everyday needs in the classroom.
3. The child is convinced of his needs and sees how to improve his skills.

Although informal reading inventories are valid and probably the most accurate measure (2) (27) (31) (34) (10) of reading, they are usually administered individually and thus, are exceedingly time-consuming. However, it is thought by some that the informal reading inventory coupled with an appropriate Cloze test (22) would provide the teacher with an excellent informal battery to determine deficiencies or an instructional level.

Rationale and Utility of the Cloze Procedure

The earliest reported study of the Cloze procedure was by Wilson L. Taylor (29) in 1953 and was concerned with readability. Research following the three studies has largely strengthened, substantiated, and refined the technique as Taylor originally described his study.

"Cloze" is derived from "closure", a term gestalt psychology applies to the human tendency to complete a familiar but incomplete pattern. As defined by Taylor,

A cloze unit is any single occurrence of a single 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.

Within this framework he describes Cloze procedure as a method of "intercepting a message from a transmitter (writer or speaker), mutilating its language patterns by deleting parts, and so administering it to receivers (listeners or readers) that their attempts to make the

patterns whole again potentially yield a considerable number of cloze units."

In constructing a cloze test, a message is mutilated by deleting certain words and substituting underlined blank spaces of constant length. The subject taking the test is instructed to guess the precise word which was deleted from each space. To the extent that the reader and the writer have similar backgrounds of experience, interests, and language habits, the reader should be able to make accurate predictions of words which have been deleted. In the words of Wilson and Carrol (35),

The underlying logic of the method is as follows:
If the encoder producing a message and the decoder receiving it happen to have highly similar semantic and grammatical habit systems, the decoder ought to be able to predict or anticipate what the encoder will produce at each moment with considerable accuracy. In other words, if both members of the communication act share common associations and common constructive tendencies, they should be able to anticipate each others' verbalizations.

Thus, the Cloze procedure is an objective measure of language correspondence between reader and writer.

Two types of Cloze deletions have been widely used: structural, in which every nth word in a passage is deleted and lexical, in which every nth noun or main verb (or rarely, adjective) is deleted. Structural deletions (22) correlate significantly more highly with vocabulary and reading comprehension sections of a diagnostic reading test than do lexical deletions; and lexical deletions correlate significantly more highly with story comprehension than do structural deletions.

According to Weaver (33), lexical deletions actually reduce the efficiency of structural Cloze as a measure of comprehension. He assumes that a correct response to lexical Cloze units depends to a

great extent upon the semantic constraints of the context. "The completion of lexical units is tied in to the cognitive and affective systems of the organism." He further assumes that a proper interpretation must involve some understanding of the formation and retention of concepts, problem-solving strategies, categorization, and heuristically organized retrieval schemes.

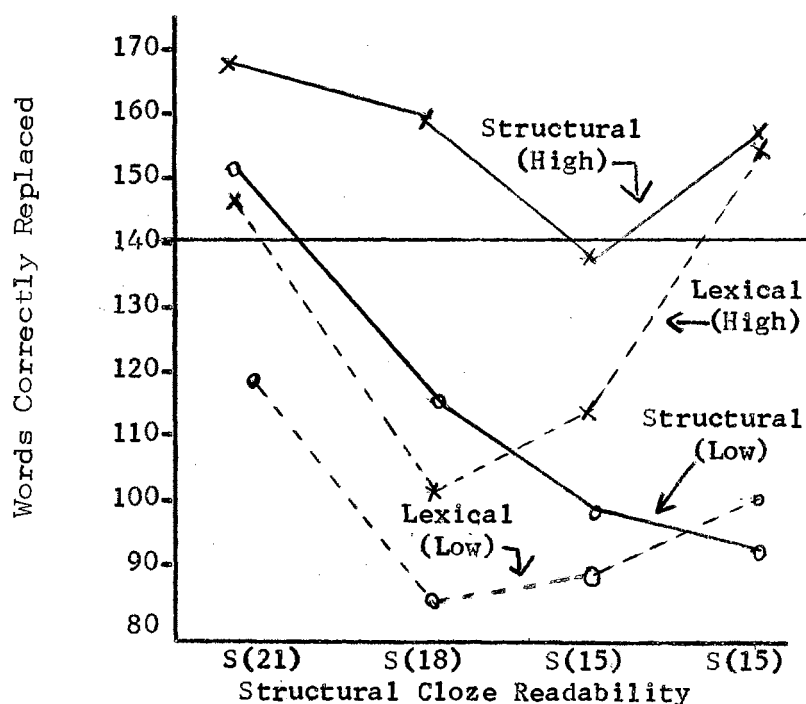


Figure 1. Lexical and Structural Deletions of Subjects with High and Low Reading Ability on a Structural Difficulty Scale.

The Cloze procedure deals only with words as they occur in larger patterns which stand for particular meanings at the time they are transmitted or received. This being so, an infrequently used word may be

very easily replaced. Taylor's example of the words "tipped" and "lady" is graphic. "The polite old gentleman always _____ his hat when he met a _____." Both infrequently used words are easily replaced. Using Taylor's example again: "You want to know what the wolf did to the sheep? He killed _____ sheep." The noun and verb matter very little in this context but the deletion could be an article or many finite numbers could also be used.

Jenkinson, as referred to by (23), (19), (25), made a study of the responses of high school students to three types of literary passages utilizing Cloze procedure: descriptive-metaphorical, allegorical, and ironical. Those students who had made very high and very low scores were interviewed while taking another Cloze test and, while taking the test, verbalized the reasons for the choice of word for each deletion. These introspective-retrospective verbalizations were recorded and later analyzed.

The high scoring students demonstrated significantly greater superiority in such characteristics as recognizing syntactical clues, sensitivity to style, fusion of separate meanings into ideas, recognition of implied meanings, verbal flexibility, knowledge of word meanings and language structure. Jenkinson then outlined a number of implications for instruction and for testing as a result of her study. The most significant to the present study is the suggestion that Cloze procedure could be easily utilized to measure reading achievement of an individual in several curricular ideas. Rankin (23) comments on the Jenkinson study by saying, "It is doubtful that the 'catechistic method' which equates comprehension with the ability to answer questions after reading could yield such insightful findings of the underlying factors

involved in the process of reading."

The writer believes that the ease of test construction should make the Cloze procedure an exceedingly useful tool for the classroom teacher. In all other kinds of test construction the difficulty of composing reliable test questions is a factor not to be considered lightly by even those trained to write test questions. The tests are easily scored because it is strictly objective. Until recently, the barrier to the full use of the Cloze procedure was the raw score or the total number of correct responses on a given Cloze test. This research (9) and the procedure for utilizing the raw scores will be discussed in the following section of this chapter.

The classroom teacher could use the Cloze procedure to determine readily the readability of the textbook material relative to the type of students in a given class. Furthermore, both general comprehension skills and specific comprehension relative to particular subject matter material could be determined. Discrepancies between these two types of comprehension could provide suggestions for individualizing teaching techniques. Rankin (23), basing his suggestion on Jenkinson's study, thinks that the remedial reading specialist will find many uses for this technique.

Selected Related Cloze Research

Taylor (29) introduced the Cloze procedure to professional literature in 1953. In 1959 Rankin (22) reviewed the extant literature on the topic. When he next surveyed the literature in 1965 (23), Rankin's bibliography included almost fifty items. Taylor's first studies will

be reviewed due to their relevance to the present study and their importance to the field of studies of the Cloze procedure.

In Taylor's first study (29) he found that apparently Cloze scores ranked the readability of the selected passages in the same order of readability as the Flesch and Dale-Chall formulas. He further assumed that Cloze procedure and the two formulas were measuring the same thing.

Taylor also measured the effect of the number of deletions per passage and with the very small number of subjects -- twelve adults -- found that a passage should have more than sixteen blanks to establish its reliability. He did not determine if the length of passage or density of deletions were the variable. The same passages were scored on the basis of the exact word or a synonym, and he found the degree of differentiation was virtually identical.

Taylor's second study in 1957 (30) was concerned with an experiment aimed at testing the validity of Cloze indices of readability by determining the degree to which scores of individual subjects correspond to individual measures of specific knowledge and general aptitude. He assumed at the outset that readability and comprehensibility were essentially synonymous terms. Taylor was specifically testing the hypothesis that the Cloze scores of individual subjects would correlate significantly with their performances on (a) carefully constructed pre-knowledge and immediate recall tests of the content of the material presented, and (b) a standardized aptitude or intelligence test. Eight samples were chosen for the Cloze forms from which ten words were mechanically deleted and the mutilated samples were combined to make the Cloze test form. Analysis dealt with five scores for each subject, the

two comprehension scores, two Cloze scores, and the general intelligence score on the AFQT. All product moment coefficients for all 48 subjects on the five tests were high. Taylor interpreted the finding to mean that all the tests were measuring the same thing. If the comprehension tests actually measured knowledge before and after study, so did the Cloze tests.

For this same study there was also evidence to substantiate the first study. A comparison of the findings indicated that there is little or no advantage in limiting deletion to "important" words or certain parts of speech. When all words are considered equally liable to deletion as in the Cloze procedure, the results are generally superior to those findings based on the deletion of nouns, verbs, and adverbs.

Departing from Taylor's research is the study made by Fillenbaum, Jones, and Rapaport (16) which was concerned with the grammatical and lexical predictability of speech. The Cloze procedure was used and every second, third, fourth, fifth, or sixth word was systematically deleted, depending upon the experimental condition. The subjects were college students enrolled in introductory psychology and were tested in groups of five to twenty. By the researcher's definition, form class predictability indicates the extent to which words are supplied of the same grammatical class as the missing item, i.e., the extent to which context allows prediction of the sort of word deleted. Verbatim predictability is the extent to which context would allow the exact word to be supplied.

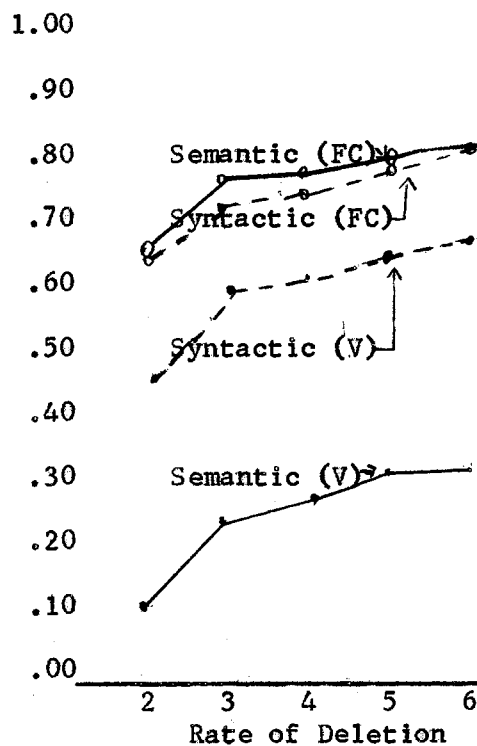


Figure 2. (Replicated from Fillenbaum, Jones and Rapaport)
 Proportion of Correct Verbatim (V)
 and Form-Class (FC) Completions:
 Semantic and Syntactic Items

The findings of Fillenbaum, Jones, and Rapaport (16) concerning the rate of deletions are pertinent to the present study of fourth grade disabled readers. Though the present study is not concerned directly with form class, both form class and verbatim completion increases moderately with decreasing frequency of deletions. The study measured the rate of deletions up to every sixth word, and it could be assumed that should the test have continued until the deletions were made at the rate of every tenth word, that the completions would have leveled approximately at that point.

Ruddell (25) studied the methods of scoring Cloze tests by counting only the exact word supplied as correct as opposed to the inclusion of synonyms. At the same time he measured the effect of oral language structure as a variable in comprehension. The format criteria of the six Cloze tests were that the content be based on science materials, the readability be determined as 4.9 by the Dale-Chall Readability Formula, and every fifth word be deleted. Three of the Cloze tests were prepared utilizing only those language patterns found in previously determined high frequency rate of oral language patterns of fourth grade children. Three Cloze tests were constructed with language patterns of a low frequency rate. The reading comprehension subtest of a standardized achievement test and the six Cloze tests were administered to 131 fourth grade pupils.

The findings pertinent to the present study were, in part, the same as the aforementioned first study by Taylor (29). Ruddell also found that including synonyms in the scores increased the variances among scores but not among the means of the tests. Including synonyms slightly increased the correlations with scores on the achievement test. As in Taylor's findings, this would suggest that the increase is so negligible as to make it impracticable to use the time-consuming procedure of including synonyms.

Concerned with previously researched methods of scoring Cloze tests, Bormuth (8) devised a study whereby Cloze test results were classified according to their semantic and grammatical relationships to the deleted word. Scores based on each of these categories were studied to determine which were most valid when the tests were used to measure reading ability and passage difficulty.

Twenty Cloze tests of 52 items each, a deletion rate of every fifth word, were administered to 50 subjects from the fifth and sixth grades. The subjects were also given the reading subtest of the Stanford Achievement Test. The Cloze test responses were classified as: (1) exact word, grammatically correct; (2) exact word, grammatically incorrect; (3) synonym, grammatically correct; (4) synonym, grammatically incorrect; (5) unrelated semantically, grammatically correct; (6) unrelated semantically, grammatically incorrect; and (7) unclassifiable. The seven scores were correlated with the total reading score on the achievement test. A multiple regression analysis revealed that the exact word, grammatically correct, was most closely related to a reader's comprehension. Further, an analysis of variance was performed using the means of the separate scores on each passage. The same score (exact word, grammatically correct) differentiated the difficulty most satisfactorily. Bormuth interpreted his findings to mean that the subjects' comprehension of a passage is dependent upon both his ability to interpret sentence structure correctly and to understand the content. He thought that the findings further suggested that the comprehension of a passage is in some degree incorrect when the responses to Cloze items are anything other than the exact word.

Bormuth (7) also devised a study to determine how Cloze test forms made from the same passage differ and if the length of the test is a variable. Five test forms were made from each of 20 passages. Every fifth word was deleted beginning with the first word in the second sentence and continuing with successive words so that every word in the 250 word passage appeared as a deletion item. Readability levels were determined by the Dale-Chall Formula and ranged from about the 4.0

to 8.0 grade levels. Four passages were selected from subject matter areas of literature, history, geography, political science and physical sciences. The subjects constituted the entire enrollments of grades 4 through 8 in a small city. Each subject was first given the Stanford Reading Achievement Test and the total scores were used for dividing them into five groups having matched means and distributions. A different form of each of the Cloze tests was given to each of the 139 subjects so that every subject in every group took one of the forms over each of the twenty passages. The exact word response was considered correct, including phonetic spellings. Cumulative scores were tabulated after every fifth item to form ten test lengths in each passage.

A study of the replicated table from Bormuth's investigation shows that the differences among test forms that are made from the same passage tend to diminish as more items are included in the tests and that the rate of diminution decreases as the number of items included in the test forms become larger. Even when the test forms contained 50 items, large ranges continued to appear.

Until recently, the barrier to full utilization of the Cloze test procedure was that there was no frame of reference by which the size of the Cloze score could be interpreted. A raw score was just that and had no meaning for interpretation to determine if a given score represented an acceptable level of performance by a student who made that score.

Bormuth (9) devised an experiment to study this problem to provide the needed frame of reference by determining comparable scores on Cloze and multiple-choice items. A fifty-item Cloze test and a thirty-one item multiple-choice test were made over each of nine passages.

Test specialists evaluated the multiple-choice items and those with a negative correlation were discarded. The Cloze tests were made by deleting every fifth word of passages approximately 275 words in length, the readability determined by the Dale-Chall Formula ranging from 4.5 to 6.5. The content of the passages were from subject matter areas of literature, history, and science.

TABLE I

NUMBER OF DIFFERENCES AMONG EACH OF THE SETS OF MEANS OBTAINED
FROM THE FIVE CLOZE TEST FORMS MADE FROM THE SAME PASSAGE
THAT REACHED VARIOUS LEVELS OF SIGNIFICANCE
AT VARIOUS TEST LENGTHS (No. of
Deg. of Freedom 4/690)

Levels of Significance	Number of Items Included in Each Test Form									
	5	10	15	20	25	30	35	40	45	50
.01	17	14	10	11	9	6	4	5	3	5
.05	3	4	7	4	7	5	7	6	9	8
Not Significant	0	2	3	5	4	9	9	9	8	7
No. of Passages	20	20	20	20	20	20	20	20	20	20

Total scores of the nine Cloze and multiple-choice tests were separately summed. Bormuth assumed that this procedure had the effect of increasing test reliability by averaging out the effects caused by individual tests and by the variabilities within the subject. The replicated table below (Table II) reports a summation of findings extremely pertinent to the present study of the performance of disabled readers with Cloze procedure.

TABLE II
EQUIVALENT CLOZE AND MULTIPLE-CHOICE TEST
Percentage Scores*

Cloze Test Scores	Multiple-Choice Raw	Test Scores Corrected
19	50	33
23	55	40
27	60	47
31	65	53
35	70	60
38	75	67
42	80	73
46	85	80
50	90	87
53	95	93
57	100	100

*The Standard Error of the b or regression coefficient was .037.

These data were entered into a regression equation to calculate the most probable multiple-choice score associated with each of several Cloze scores. Bormuth concluded that "if the conventional readability standards are accepted, a passage on which a student receives a Cloze score of 38 per cent is sufficiently understandable to him to be used in his instruction. That is, he can correctly answer about 75 per cent of the multiple-choice items that can be written over that passage."

Gallant's study (17) indicated that the Cloze procedure was a valid and reliable measure of reading comprehension for beginning readers. Two hundred seventy three pupils from grades one through four were given the reading test from an appropriate grade level form of a standardized achievement test. The same population was given the same section of a comparable form of the standardized achievement test

rewritten as a Cloze test. A modified form of the Cloze test was prepared for first grade children by giving a choice of three responses for each deleted word. Reliability of the Cloze tests was established by calculation of split-half reliability coefficients for odd-even items, corrected by application of the Spearman-Brown Formula. The reliability coefficients ranged from .90 to .97 and were significant at the .01 level of confidence.

Ransom (24) compared the relative indicated reading levels of children using a Cloze test and an informal reading inventory. Six classes representing grades one through six constituted the population. The informal inventories were two passages on each grade level selected from basal readers. The Cloze tests were constructed from the same graded series used in the construction of the informal reading inventories and the readability was established using the Spache and Dale-Chall Readability Formulas. The length and numbers of deletions in a passage varied from preprimer with five deletions to the ninth level with twenty-five deletions. She arbitrarily assigned a 50-30-20 ratio for independent, instructional, and frustration levels, respectively, for the Cloze test. Ransom found that the correlations were statistically significant between the Cloze test and the informal reading inventory at the instructional and frustration reading levels for all grades except grade one. The correlations for the independent reading level were not significant at the .01 level of confidence for most of the grades tested.

The extant Cloze literature concerning elementary school children does not include the disabled reader specifically. Therefore, the

studies selected for review were included to provide credence for Cloze testing and statistical procedures for this study i.e., validity of Cloze testing, rate of deletion, scoring, and conversion of raw scores to grade level scores.

CHAPTER III

DESIGN AND METHODOLOGY

Introduction

Four studies, independent in nature but utilizing the same population, were planned to obtain diagnostic information about reading skills of the sample population as follows:

Two studies explored the effect of the test material used on the error patterns of groups and of individuals.

Study I. The length of passage necessary to obtain a reliable measure of a reader's error pattern and the effect of passage difficulty on error patterns.

Study II. A comparison of error patterns obtained on three oral diagnostic tests and a comparison of errors made on words in isolation and a comparison of errors made on oral and silent reading diagnostic tests.

Two studies validated experimenter-made tests for use with disabled readers.

Study III. A validation study of the use of a nonsense-word test to determine mastery of word analysis skills development (to minimize the effect of sight vocabulary or context on the skills test performance.)

Study IV. A study of the use of a Cloze test to determine the reading comprehension instructional levels of disabled readers.

The purpose of this study (Study IV) was to investigate the feasibility of using a Cloze test as an instrument to determine the reading comprehension instructional levels of disabled readers. The instruments used were a Cloze test of original materials, composed and constructed specifically for the study, the reading subtests of a standardized achievement test, and a standardized informal reading inventory.

Specifically, the study was designed to compare scores of the Cloze instrument with grade placement scores of the standardized reading subtests, comprehension and word meaning, and the scores of the Cloze test with the grade level scores of the standardized informal reading inventory to determine whether or not there were significant relationships. For purposes of analyses, null hypotheses were stated so that the correlation coefficients between the Cloze test scores and the grade level scores of the standardized tests could be tested for statistical significance.

The purpose of this chapter is to present (1) a description of the Cloze test, (2) data collection procedure for the response analyses of the Cloze test, (3) the population and data collection procedure for the sample population, (4) a description of the selected standardized reading tests, and (5) the subsequent procedures for arriving at statistical analyses.

Construction of the Cloze Instrument

Three stories of approximately 200 words each were composed, the format of which was conceived to be sequential in nature and of wide interest to elementary school children. Each story covered one page and was carefully constructed so that the readability of page one is 2.0, page two is 2.5, and page three is 3.0 as measured by the Spache Readability Formula (27).

For each page of the continuing story, a numeral between one and ten was randomly selected. That numeral represented the first deletion from the initial word of the story and every tenth word thereafter was deleted. The deletions were replaced with blank lines exactly twenty typewritten spaces in length.

Specific instructions for administering the test were prepared. This sheet was stapled to the three previously described Cloze test pages. (See Appendix D)

Data Collection Procedure for the Response Analyses of the Cloze Test

The Cloze test was first administered to whole classrooms of fourth grade pupils. Four hundred fifty-four children from 34 schools in Kay County, Oklahoma, took the test in an untimed situation. The participating schools reflected a wide range of socio-economic levels and included urban and rural public schools, three sectarian (Catholic and Lutheran) schools and one rural public school with an enrollment of Indian children.

The purpose of this initial testing was to obtain a representative sampling of item responses. A response analysis was tabulated on each of the 61 items of the Cloze test. (See Appendix A)

The Population and Data Collection Procedure

A survey of thirty-four schools in Kay County, Oklahoma, including urban and rural public schools, urban sectarian and one rural Indian school, was conducted to locate those fourth grade pupils whose teachers ranked them in the lower one-third in reading achievement in their respective classes.

TABLE III
SCREENING POPULATION REPRESENTATION

N = 293	Number of Schools Participating	Number of Subjects
Urban Schools		
Public	17	222
Sectarian	3	28
Rural Schools		
Public	13	39
Indian (Public)	1	4
Totals	34	293

For screening purposes to identify the disabled fourth grade readers for Study IV the following tests were administered:

1. The reading subtests of the Stanford Achievement Test, Primary II, Form W, Word Meaning and Comprehension.
2. The Standard Reading Inventory, Form B, to randomly select pupils with Stanford Reading Test scores from either test ranging between 2.0 and 4.5.

The Stanford Reading Achievement Tests were scored according to instructions in the test manual. Each test was rechecked by a second party and the scores recorded.

The Standard Reading Inventory (S.R.I.) was administered and tape recorded by reading clinicians. The tests were then evaluated by a team of three reading clinicians* for accuracy of evaluation, and the derived grade levels were recorded with the two previously tabulated test scores.

The Cloze Test was administered to those members of the population selected who had not been included in the original whole classroom Cloze Testing. All Cloze scores were recorded with the S.R.I. and the Stanford Reading Scores.

The names of the pupils were listed alphabetically. Those subjects who had not been tested with all three tests, whether due to absences or moving from the school districts, were eliminated from the study. Each subject was assigned a permanent number and was identified as such for the remainder of the study. (See Appendix E)

* The reading clinicians consisted of a team of three doctoral students, Miss Rita Stuever, Miss Marjorie Berends, and Mrs. Bettie Vanice.

TABLE IV
POPULATION DISTRIBUTION OF PARTICIPATING SCHOOLS

N = 191	Number of Schools Participating	Number of Subjects
Urban Schools		
Public	17	148
Sectarian (Catholic and Lutheran)	3	38
Rural Schools	13	27
Indian (Public)	1	3
Totals	34	191

It was believed to be important to the study to compare the responses on the Cloze Test of the whole classroom population of 454 pupils with the responses of those classified as disabled by the Standard Reading Inventory. Subsequently, a response analysis of all subjects from the sample population of 191 pupils whose instructional level was 2.0 or 3.0 as determined by the Standard Reading Inventory was prepared. (See Appendix B)

The comparison of responses from the whole classroom testing, assumed to be heterogeneous distribution, N = 454, and the sample population of those pupils whose reading instructional level was 2.0 and 3.0, N = 106, was summarized. (See Appendix C)

A Description of the Standardized Tests

The Standard Reading Inventory

The Standard Reading Inventory was designed to be administered to individual subjects, measuring his independent, instructional and frustration levels. The Spache and the Dale-Chall Readability Formulas were used to determine the reading levels which in turn were based on basal reading series.

Form B of the Standard Reading Inventory consists of eleven stories for oral reading, eight stories for silent reading, and eleven word lists for measuring skill in pronouncing words in isolation.

The reading achievement areas for measurement in the Standard Reading Inventory are Recognition Vocabulary with words both in isolation and in context, oral reading errors, comprehension and speed. Comprehension included recall after oral and silent reading and interpretation and word meaning after oral and silent reading.

Concurrent validity of the Standard Reading Inventory and the California Reading Test was ascertained with 79 children completing second grade. The correlation was 0.87. A second study was made with the two subtests of the Stanford Achievement Test and the correlations were .77 with the Standard Reading Inventory and Stanford Comprehension and .88 with the Standard Reading Inventory and Stanford Word Meaning.

The Stanford Achievement Test, Form W, Primary II Battery

The Stanford Achievement Test was composed to be administered in group situations. It was selected for this study because the Comprehension subtest most closely approximates Cloze procedure. The

difference, however is that the standardized comprehension test allows the subject to select from a list of responses. Cloze procedure is such that the chosen response must be gained from context only.

The Stanford Comprehension Test consists of a series of paragraphs graduated in difficulty, from each of which one or more words have been deleted. The subject selects a response from a list of four words. There are 60 items in the test.

The Stanford Word Meaning Test consists of 36 multiple-choice items, graduated in difficulty, which measure the ability of a pupil to read a sentence and to select a correct word to complete the sentence. There are four items from which the pupil makes each response.

Preparation of Data for Analysis

Criteria for Determining Instructional Grade Level Scores

Stanford Comprehension and Word Meaning Tests: For both subtests of the Stanford Achievement Test, Comprehension and Word Meaning, the raw scores were converted to grade level scores according to the scale on the manual of instruction.

Standard Reading Inventory: The Standard Reading Inventory is an informal reading inventory that has been standardized. Each subject was tested and the individual sessions tape recorded by a reading clinician who adhered to the criteria as described in the testing manual. The reading instructional grade levels were then recorded on the cover of each test.

The Cloze Test: For each of the three Cloze Test passages one point was given for each response that was identical to the word in the unmutilated passage. Phonetic spellings or misspellings were considered

correct if the intent of the subject was clear. The three raw scores were recorded on the face of each test, then transferred to the data sheet.

The criteria for converting the raw scores to grade level scores was based on Bormuth's (9) study that established the 38th percentile as the lowest cutting score on a given readability passage. Each raw score for a given subject was converted to an instructional grade level score as: (1) the highest level at which the pupil scored 38% or more correct responses; (2) the third passage raw scores at the 3.0 readability level were scored as 3.0 if the raw scores fell between 7 and 11 (38% and 55%); the raw scores were converted to 3.5+ if the third passage raw score was 12 or more (60%); (3) if no score on any of the three passages was above the 38% lower cutting score, then the subject was assigned at an instructional level of 1.5.

The 55th percentile, raw score 11, was selected as the upper level cut-off score for the third passage, 3.0 readability level, to be counted as 3.5 or higher instructional level. Within the definition of disability for fourth grade pupils, a determined instructional level of 3.0 and lower is termed disabled.

The upper level cut-off score was determined by tabulating a survey of 278 Stanford Comprehension grade level scores with the corresponding Cloze third passage, 3.0 readability level. The distribution of raw scores of the cloze test (10 or more) was as follows:

TABLE V
DETERMINATION OF UPPER-LEVEL CUT-OFF SCORE

Cloze Raw Scores	Percentile	Stanford Scores below 3.0	Number
10	.50	46%	N = 28
11	.55	35%	N = 40
12	.60	10%	N = 29
13	.65	13%	N = 23
14	.70	17%	N = 28
15	.75	7%	N = 13
16	.80	0%	N = 9
17	.85	0%	N = 3

Matching Membership Scores

From data derived from Appendix D, the Standard Reading Inventory, the Stanford Comprehension and Word Meaning Test scores were each separately tabulated by instructional grade level scores with the corresponding Cloze Test scores. (See Appendix E)

This grouping provided a more accurate means of determining those subjects whose standardized test score matched those of the Cloze Test instructional score.

On each grade level the total number of pupils whose scores put them in that instructional level were counted. The results are to be found in Chapter 4, Table 6a. Instructional grade level scores were matched, i.e., an S.R.I. score of 2.0 would correspond with a Cloze Test instructional score of 2.0. These were counted and tabulated. The matching membership scores by class and test are to be found in Chapter 4, Table 6b.

CHAPTER IV

ANALYSIS OF DATA

The Cloze Test is to be considered as a clinical psychometric device. The concern of this study is in assessing the efficiency with which it properly classifies individuals and not with the significance of difference between groups. Specifically, the assessment involves the efficiency with which the Cloze Test places fourth grade disabled readers into correct instructional grade level groups.

Reading behavior called disabled has a relatively low incidence in the general population of fourth grade readers. Therefore, a restricted population is used initially in which the proportion of disabled readers is relatively large. This incidence of a specified behavior is called a base rate and is designated by the symbol P .

The restricted population used in this study was selected from the total fourth grade population of the 34 participating schools by teachers using methods other than the experimental instrument or the criterion diagnostic procedure. The procedures used constitute a composite of typical teacher approaches to identification of such a population. The restricted population provided by teacher judgement actually represents a general class of retarded readers of which a subpopulation is designated as disabled. Thus, the initial restricted population of fourth grade readers represents a mixture of these two classifications of readers in unknown proportions. In order to

demonstrate the efficiency of the experimental instrument, the Cloze Test, as a clinical psychometric device, it is required that the total membership of the restricted population be correctly classified into retarded and disabled categories. Subsequent analyses will involve only the disabled category. For all restricted populations and sub-populations used in this study, it is assumed that the base rate, P , in the experimental situation is consistent with that found in similarly constituted populations, an assumption which permits generalizable cutting scores previously specified for the experimental instrument to be applied to this situation.

The Analysis Rationale and Structure

Given below is an explanation of the symbols used in the analysis procedures of this study. Fig. 3 defines schematically the analysis structure.

P = Base rate of valid positives in the population examined, i.e., that collection of individual members who actually belong within the category of experimental concern, and, as a group, constitute a known proportion of the total membership of the population under examination.

Q = The valid negative rate, i.e., for the population examined, that proportion of the total membership that does not belong within the category of experimental concern.

$P + Q = 1$, i.e., the total membership of the population examined is partitioned by actual diagnosis as either belonging within or not within the category of experimental concern.

P_1 = Proportion of valid positives correctly identified by the experimental instrument.

q_2 = Proportion of valid negatives correctly identified by the experimental instrument.

$q_1 = 1 - p_1$ misidentification by experimental instrument.

$p_2 = 1 - q_2$ misidentification by experimental instrument.

Classification from Test	Actual Diagnosis		Total Classified from Test
	Positive	Negative	
Positive	P_1 Valid positive rate (Proportion of positives called positive)	P_2 False positive rate (Proportion of negatives called positives)	$P_1 + P_2$ Number of Test positives
Negative	q_1 False negative rate (Proportion of positives called negative)	q_2 Valid negative rate (Proportion of negatives called negative)	$q_1 + q_2$ (Number of Test negatives)
Total Actually Classified	$P_1 + q_1 = 1.0$ Total Positives	$P_2 + q_2 = 1.0$ Total Negatives	N (Total number of cases)

Figure 3. Schematic Definition of Symbols

The analysis rationale specified two conditions that must be correctly employed in the analysis procedure for proper interpretation of the experimental data:

1. Given the condition that the positive base rate P is greater than the negative base rate Q for a given clinical population, i.e., $P > Q$, then for evidence of practical efficiency, it is required that the inequality $P < \frac{q_2}{q_2 + q_1}$ hold.
2. Given the condition that the positive base rate P is less than the negative base rate Q for a given clinical population, i.e., $P < Q$, then for evidence of practical efficiency, it is required that the inequality $Q < \frac{p_1}{p_1 + p_2}$ hold.

Analysis Procedure

The hypotheses specified as H_{o_1} through H_{o_9} are designed to provide evidence for the efficiency with which the Cloze Test correctly places disabled readers within the proper instructional grade level category. The analysis structure shown in Figure 3 and the data given in Tables 6a and 6b are used in the analysis procedure.

TABLE VIa

TOTAL MEMBERSHIP BY CLASS AND TEST

	Stanford			
	S.R.I.	Cloze	Comprehension	Word Meaning
1.0 - 1.9	4	14	8	X**
2.0 - 2.4	34	23	17	8
2.5 - 2.9	X**	11	24	25
3.0 - 3.4	72	87	72	60
3.5* plus	<u>81</u>	<u>56</u>	<u>70</u>	<u>98</u>
Total Membership	191	191	191	191

* 3.5 plus not considered disabled by definition
 ** No tests scored in this classification

TABLE VIb

MATCHING MEMBERSHIP SCORES BY CLASS AND TEST

Grade Level Classification	S.R.I.	Cloze	Cloze	Comp.	Wd. Mng.	Wd. Mng.
	Cloze	S. Comp.	Wd. Mng.	S.R.I.	S.R.I.	S. Comp.
1.0 - 1.9	4	4	X**	3	X**	X**
2.0 - 2.4	10	5	3	8	4	3
2.5 - 2.9	X**	2	1	X**	X**	2
3.0 - 3.4	42	46	38	36	31	29
3.5* plus	<u>22</u>	<u>21</u>	<u>24</u>	<u>44</u>	<u>61</u>	<u>49</u>
Total Matching Scores	78	78	66	91	96	73

* Not considered disabled by definition
 ** No tests scored in this classification

Ho₁: Cloze Test, as a clinical psychometric device will correctly categorize the restricted membership of fourth grade readers into the retarded (3.5 and above) and the disabled (below 3.5) reading instructional classifications. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

TABLE VII

S.R.I. and CLOZE ANALYSIS OF MEMBERSHIP
IN RETARDED (3.5 and above) AND
DISABLED (below 3.5)
CLASSIFICATIONS

Classifica- tion from Test	Actual Classification				Total Class- ified from Test
	Positive 3.5 and above Class A-1		Negative Below 3.5 Class A-2		
	P ₁	%	P ₂	%	
Class A - 1 (Positive)	22	.27	54	.49	76
Class A - 2 (Negative)	59	.73	56	.51	115
Total Classified	81	100%	110	100%	191

$$P = \frac{81}{191} = 42\%$$

$$P < Q$$

$$Q = 1 - .42 = 58\%$$

Conditions for the test to exhibit practical efficiency when compared with the base rate are:

$$Q < \frac{P_1}{P_1 + P_2} = \frac{.27}{.27 + .49} = \frac{.27}{.76} = .35$$

$$.58 < .35$$

The hypothesis is rejected for classifying the two categories when comparing the matching membership scores of the Standard Reading Inventory and the Cloze Test classifications. The base rate 58% is not less than 35%, so the inequality did not hold with this cutting score.

H_0 : The Cloze Test as a clinical psychometric device will correctly classify specific members of the total membership of fourth grade disabled readers into the 3.0 - 3.4 grade level instructional category. The base rate of this subpopulation, $P > Q$, requires that the inequality $P < \frac{q_2}{q_2 + q_1}$ hold to demonstrate practical efficiency.

TABLE VIII

S.R.I. AND CLOZE ANALYSIS OF MEMBERSHIP
IN 3.0 - 3.4 CLASSIFICATION

Classification from Test	Actual Classification				Total Classified from Test
	Positive (3.0-3.4) Class B-1	%	Negative (Below 3.0) Class B-2	%	
Class B - 1 (Positive)	P_1 42	.59	P_2 24	.63	66
Class B - 2 (Negative)	q_1 30	.41	q_2 14	.37	44
Total Classified	72	100%	38	100%	110

$$P = \frac{72}{110} = .65 \quad P > Q \quad P < \frac{q_2}{q_2 + q_1} = \frac{.37}{.37 + .41} = .47$$

$.65 < .47$, i.e., 65% is not less than 47% so the inequality does not hold. The hypothesis is rejected for practical efficiency when comparing the matching membership scores of the Cloze Test and the Standard Reading Inventory classifications at the 3.0 - 3.4 grade level.

Ho₃: The Cloze Test as a clinical psychometric device will correctly classify specific members of the total membership of fourth grade disabled readers into the 2.0 - 2.4 grade level instructional category. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

TABLE IX

S.R.I. AND CLOZE ANALYSIS OF MEMBERSHIP
IN 2.0 - 2.4 CLASSIFICATION

Classifica- tion from Test	Actual Classification				Total Classi- fied from Test
	Positive (2.0-2.4) Class C-1	%	Negative (All Others) Class C-2	&	
	P ₁		P ₂		
Class C - 1 (Positive)	10	.30	30	.40	40
	q ₁		q ₂		
Class C - 2 (Negative)	24	.70	46	.60	70
Total Classified	34	100%	76	100%	110

In this case, $P < Q$, so the conditions for the test to exhibit practical efficiency when compared with the base rate are $Q < \frac{P_1}{P_1 + P_2}$.

$$P = \frac{34}{110} = 30\% \quad Q = 1 - P = 1 - .30 = .70$$

$$Q < \frac{P_1}{P_1 + P_2} = \frac{.30}{.30 + .40} = 43\%$$

.70 ~~>~~ .43, i.e., 70% is not less than 43% so the inequality does not hold. The hypothesis is rejected for practical efficiency when comparing the matching membership scores of the Cloze Test and the Standard Reading Inventory classifications at the 2.0 - 2.4 grade level.

Ho₄: The Cloze Test as a clinical psychometric device will correctly classify specific members of the total membership of fourth grade disabled readers into the 1.5 - 1.9 grade level instructional category. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

TABLE X

S.R.I. AND CLOZE ANALYSIS OF MEMBERSHIP
IN 1.5 - 1.9 CLASSIFICATION

Classifica- tion from Test	Actual Classification				Total Classi- fied from Test
	Positive (1.5 - 1.9) Class D-1		Negative (All Others) Class D-2		
	P ₁	%	P ₂	%	
Class D - 1 (Positive)	4	100	0	.51	4
Class D - 2 (Negative)	0	0	106	.49	106
Total Classified	4	100%	106	100%	110

In this case $P < Q$, so the conditions for the test to exhibit practical efficiency when compared with the base rate are $Q < \frac{P_1}{P_1 + P_2}$.

$$P = \frac{4}{110} = 36\% \quad Q = 1 - p = 1 - .36 = .64$$

$$Q < \frac{P_1}{P_1 + P_2} = \frac{4}{4 + 0} = 1$$

.64 < 1.00, i.e., 64% is less than 1.00 so the inequality holds. The hypothesis is accepted for this particular cutting score when comparing the matching membership scores of the Cloze Test and the Standard Reading Inventory classifications at the 1.5 - 1.9 grade level.

H_0 : A Standardized Reading Comprehension Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 3.0 - 3.4 grade level instructional category. The base rate of this subpopulation, $P > Q$, requires that the inequality $P < \frac{q_2}{q_2 + q_1}$ hold to demonstrate practical efficiency.

TABLE XI

S.R.I. AND STANFORD COMPREHENSION ANALYSIS
OF MEMBERSHIP IN 3.0 - 3.4
CLASSIFICATION

Classifica- tion from Test	Actual Classification				Total Classi- fied from Test
	Positive (3.0-3.4) Class E-1		Negative (Below 3.0) Class E-2		
	P_1	%	P_2	%	
Class E - 1 (Positive)	36	.50	27	.71	63
Class E - 2 (Negative)	36	.50	11	.29	47
Total Classified	72	100%	38	100%	110

In this case $P > Q$, so the conditions for the test to demonstrate practical efficiency when compared with the base rate are $P < \frac{q_1}{q_1 + q_2}$.

$$\text{Base Rate} = P = .65 \quad P > Q \quad P < \frac{q_2}{q_2 + q_1} = \frac{.29}{.29 + .50} = .36$$

$.65 > .36$, i.e., 65% is not less than 36% so the inequality does not hold. The hypothesis is rejected for practical efficiency when comparing the matching membership scores of the Stanford Comprehension Test and the Standard Reading Inventory classifications at the 3.0 - 3.4 level.

H_0 : A Standardized Reading Comprehension Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 2.0 - 2.4 grade level instructional category. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

TABLE XII

S.R.I. AND STANFORD COMPREHENSION ANALYSIS OF
MEMBERSHIP IN 2.0 - 2.4 CLASSIFICATION

Classifica- tion from Test	Actual Classification				Total Classi- fied from Test
	Positive (2.0-2.4) Class F-1		Negative (All Others) Class F-2		
	P_1	%	P_2	%	
Class F - 1 (Positive)	8	.23	37	.49	45
Class F - 2 (Negative)	26	.77	39	.51	65
Total Classified	34	100%	76	100%	110

In this case $P > Q$, so the conditions for the test to exhibit practical efficiency when compared with the base rate are $Q < \frac{P_1}{P_1 + P_2}$.

$$P = \frac{34}{110} = 1 - P = 1.00 - .31 = .69$$

$$.69 < \frac{.23}{.23 + .49} = .32$$

.69 $\not<$.32, i.e., 69% is not less than 32% so the inequality does not hold. The hypothesis is rejected for practical efficiency when comparing the matching membership scores of the Stanford Comprehension Test and the Standard Reading Inventory classifications at the 2.0 - 2.4 grade level.

Ho₇: A Standardized Reading Comprehension Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 1.5 - 1.9 grade level instructional category. The base rate of the subpopulation, $P < Q$, requires that the inequality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

TABLE XIII

S.R.I. AND STANFORD COMPREHENSION ANALYSIS OF
MEMBERSHIP IN 1.5 - 1.9 CLASSIFICATION

Classification from Test	Actual Classification				Total Classified from Test
	Positive (1.5-1.9) Class G-1	%	Negative (All Others) Class G-2	%	
	P_1		P_2		
Class G - 1 (Positive)	3	.75	58	.55	61
	q_1		q_2		
Class G - 2 (Negative)	1	.25	48	.45	49
Total Classified	4	100%	106	100%	110

In this case $P < Q$, so the conditions for the test to exhibit practical efficiency when compared with the base rate are $Q < \frac{P_1}{P_1 + P_2}$.

$$\text{Base Rate} = \frac{4}{110} = 4\% \quad P < Q \quad Q = 1 - p = 1.00 - .04 = .96$$

$$Q < \frac{.75}{.75 + .55} = .57$$

.96 \times .57, i.e., 96% is not less than 57% so the inequality does not hold. The hypothesis is rejected for practical efficiency when comparing the matching membership scores of the Stanford Comprehension Test and The Standard Reading Inventory classifications at the 1.5 - 1.9 level.

H_0 : A Standardized Word Meaning Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 3.0 - 3.4 grade level instructional category. The base rate of this subpopulation, $P > Q$, requires that the inequality $P < \frac{q_2}{q_2 + q_1}$ hold to demonstrate practical efficiency.

TABLE XIV

S.R.I. AND STANFORD WORD MEANING ANALYSIS OF
MEMBERSHIP IN 3.0 - 3.4 CLASSIFICATION

Classification from Test	Actual Classification				Total Classified from Test
	Positive (3.0-3.4) Class H-1	%	Negative (Below 3.0) Class H-2	%	
Class H - 1 (Positive)	P_1 31	.43	P_2 34	.90	65
Class H - 2 (Negative)	q_1 41	.57	q_2 4	.10	45
Total Classified	72	100%	38	100%	110

In this case $P > Q$, so the conditions for the test to demonstrate practical efficiency when compared with the base rate are $P < \frac{q_2}{q_2 + q_1}$.

$$\text{Base Rate} = P = \frac{72}{110} = .65 \quad P > Q \quad P > \frac{.10}{.10 + .57} = .15$$

.65 \nless .15, i.e., 65% is not less than 15% so the inequality does not hold. The hypothesis is rejected for practical efficiency when comparing the matching membership scores of the Stanford Word Meaning Test and the Standard Reading Inventory classifications at the 3.0 - 3.4 level.

H₀: A Standardized Word Meaning Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 2.0 - 2.4 grade level instructional category. The base rate of this subpopulation, $P < Q$, requires that the inequality

$$Q < \frac{P_1}{P_1 + P_2} \quad \text{hold to demonstrate practical efficiency.}$$

TABLE XV

S.R.I. AND STANFORD WORD MEANING ANALYSIS OF
MEMBERSHIP IN 2.0 - 2.4 CLASSIFICATION

Classification from Test	Actual Classification				Total Classified from Test
	Positive (2.0-2.4)		Negative (All Others)		
	Class I-1	%	Class I-2	%	
	P ₁		P ₂		
Class I - 1 (Positive)	4	.12	45	.59	49
	q ₁		q ₂		
Class I - 2 (Negative)	30	.88	31	.41	61
Total Classified	34	100%	76	100	110

In this case $P < Q$ so the conditions for the test to exhibit practical efficiency when compared with the base rate are $Q < \frac{P_1}{P_1 + P_2}$.

$$\text{Base Rate} = P = \frac{34}{110} = 31\%$$

$$Q = 1 - P = 1.00 - .31 = .69 \text{ or } 69\%$$

$$.69 < \frac{.12}{.12 + .59} = 17\%$$

$.69 > .17$, i.e., 69% is not less than 17% so the inequality does not hold. The hypothesis is rejected for practical efficiency when comparing the matching membership scores of the Stanford Word Meaning Test and the Standard Reading Inventory classifications at the 2.0 - 2.4 level.

Examination of the Hypotheses

H_{01} : The Cloze Test, as a clinical psychometric device, will correctly categorize the restricted membership of fourth grade readers into the retarded (3.5 and above) and the disabled (below 3.5) reading instructional classifications. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

The hypothesis is rejected for the comparison of the Cloze Test and the Standard Reading Inventory to classify the restricted population into the disabled and retarded reading instructional categories. The inequality, $Q < \frac{P_1}{P_1 + P_2}$ did not hold to demonstrate practical efficiency.

From the total population of 191 fourth grade pupils in the restricted population of pupils with reading difficulty, the criterion

instrument, i.e., the Standard Reading Inventory, classified 81 as retarded (those whose instructional level is 3.5 or more) and 110 were classified as disabled (those whose instructional level is less than 3.5). The Cloze Test categorized 115 in the retarded classification and 76 in the disabled instructional classification. With the given cutting score, 49% were misidentified as disabled and 73% were misidentified as retarded. (See Table 7)

Ho₂: The Cloze Test, as a clinical psychometric device will correctly classify specific members of the total membership of fourth grade disabled readers into the 3.0 - 3.4 grade level instructional category. The base rate of this subpopulation, $P > Q$, requires that the inequality $P < \frac{q_2}{q_1 + q_2}$ hold to demonstrate practical efficiency.

The hypothesis is rejected for the comparison of the Cloze Test and the Standard Reading Inventory to classify the disabled readers at the 3.0 - 3.4 reading instructional grade level. The inequality, $P < \frac{q_2}{q_2 + q_1}$ did not hold to demonstrate practical efficiency.

From the population of 110 fourth grade pupils whose instructional reading grade level is less than 3.5, 72 were classified below the 3.0 instructional reading grade level when the Standard Reading Inventory was the criterion instrument. The Cloze Test categorized 87 in the specified instructional level. With the given cutting score, 41% were misidentified as disabled at the 3.0 - 3.4 instructional grade level. (See Table 8).

Ho₃: The Cloze Test as a clinical psychometric device will correctly classify specific members of the total membership of fourth grade disabled readers into the 2.0 - 2.4 grade level instructional

category. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

The hypothesis is rejected for the comparison of the Cloze Test and the Standard Reading Inventory classification at the 2.0 - 2.4 reading instructional level. The inequality $Q < \frac{P_1}{P_1 + P_2}$ did not hold to demonstrate practical efficiency.

From the total population of disabled readers ($N = 110$) the criterion instrument, the Standard Reading Inventory, categorized 34 in the given reading instructional grade level. The experimental instrument, the Cloze Test, placed 23 in this instructional category, but 70% were misidentified from the total disabled population.

H_{04} : The Cloze Test as a clinical psychometric device will correctly classify specific members of the total membership of fourth grade disabled readers into the 1.5 - 1.9 grade level instructional category. The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

The hypothesis is accepted for this particular instructional level using the given cutting score. However, due to the exceedingly small number, the acceptance should be viewed with skepticism.

H_{05} : A Standardized Reading Comprehension Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 3.0 - 3.4 grade level instructional category. The base rate of this subpopulation, $P > Q$, requires that the inequality $P < \frac{q_2}{q_2 + q_1}$ hold to demonstrate practical efficiency.

The hypothesis is rejected for practical efficiency when comparing the matching membership scores of the Stanford Comprehension Test and the Standard Reading Inventory (the criterion instrument) classifications at the 3.0 - 3.4 level.

The Standard Reading Inventory classified 72 pupils at this level and the Stanford Comprehension Test also classified 72 at this level. However, when comparing the matching membership scores, 50% were misidentified at the given instructional level by the Stanford Comprehension Reading Test.

Ho₆: A Standardized Reading Comprehension Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 2.0 - 2.4 grade level instructional category.

The base rate of this subpopulation, $P < Q$, requires that the inequality $Q < \frac{p_1}{p_1 + p_2}$ hold to demonstrate practical efficiency.

The hypothesis is rejected for practical efficiency when comparing the Stanford Reading Comprehension Test with the criterion instrument (The Standard Reading Inventory) matching membership scores at the 2.0 - 2.4 instructional grade level.

The criterion instrument categorized 34 pupils at the 2.0 - 2.4 instructional grade level and the Stanford Reading Comprehension Test classified 17 at this level. The Stanford Comprehension Test misclassified 77% of the disabled population at the 2.0 - 2.4 level.

Ho₇: A Standardized Reading Comprehension Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 1.5 - 1.9 grade level instructional category.

The base rate of the subpopulation, $P < Q$, requires that the in-

equality $Q < \frac{P_1}{P_1 + P_2}$ hold to demonstrate practical efficiency.

The hypothesis is rejected for practical efficiency when comparing the matching membership scores of the Stanford Comprehension Test and the Standard Reading Inventory (the criterion instrument) classifications at the 1.5 - 1.9 level.

The criterion instrument identified 4 disabled readers at this level and the Stanford Comprehension Test identified 8 disabled readers at this level. There were 3 matching membership scores, and the Stanford Comprehension Test misidentified 25% of the disabled population at this level.

Ho₈: A Standardized Word Meaning Test will correctly classify specific members of the total membership of fourth grade disabled readers into the 3.0 - 3.4 grade level instructional category. The base rate of this subpopulation, $P > Q$, requires that the inequality

$P < \frac{q_2}{q_2 + q_1}$ hold to demonstrate practical efficiency.

The hypothesis is rejected for practical efficiency when comparing the matching membership scores of the Stanford Word Meaning Test and the criterion instrument (The Standard Reading Inventory) classifications at the 3.0 - 3.4 grade level.

The criterion instrument identified 72 disabled readers at this level, the Stanford Word Meaning Test identified 60 pupils at this level and there were 31 matching membership scores. The Stanford Word Meaning Test misidentified 57% of the disabled population at this level.

Ho₉: A Standardized Word Meaning Test will correctly classify specific members of the total membership of fourth grade disabled readers into 2.0 - 2.4 grade level instructional category. The base rate

of this subpopulation, $P < Q$, requires that the inequality

$$Q < \frac{P_1}{P_1 + P_2} \text{ hold to demonstrate practical efficiency.}$$

The hypothesis is rejected for practical efficiency when comparing the matching membership scores of the Stanford Word Meaning Test with the criterion instrument (The Standard Reading Inventory) classifications at the 2.0 - 2.4 level.

The criterion instrument identified 10 disabled readers at this level and the Stanford Word Meaning Test identified 8 pupils at this level. There were 4 matching membership scores, and the Stanford Word Meaning Test misidentified 88% of the disabled population at this level.

CHAPTER IV

SUMMARY AND CONCLUSIONS

The purpose of this research was to determine whether a Cloze Test could be utilized to measure the reading instructional grade level of fourth grade disabled readers. A standardized informal reading inventory, administered and evaluated by reading clinicians, was the criterion instrument. Antecedent probability and the efficiency of psychometric signs and cutting scores was utilized as the statistical procedure.

Cloze technique was proven in other research studies to be a valid procedure for determining instructional grade levels for groups of students in heterogeneous classrooms. The present research with the restricted population of mild to severe reading disability statistically found Cloze technique to be unsatisfactory as a measure of the instructional grade level of this particular population.

The statistical procedure was necessarily harsh because the researcher was primarily interested in a method to assess the reading comprehension instructional level of the individual pupil. The grade level scores of each child in the study were matched with grade level scores of each test used for Study IV. With this objective it was not possible to soften the results with group statistics where central tendency plays such a large part.

It is believed that teachers and administrators of schools have little faith in the standardized tests now given periodically in every school. The main purpose of such testing is to compare the achievement of a given classroom or school with national norms. The concern of the teacher is the individual pupil within the total group and a means of grouping for instruction that is flexible and minimizes time expended and money spent.

There is general agreement that the informal reading inventory is the most accurate measure of the reading instructional level of the individual pupil. There is also agreement that the results of the informal reading inventory depend upon the biases, objectivity and subjectivity of the examiner. It should be noted that the criterion instrument, the Standard Reading Inventory, assesses an instructional grade level with both oral and silent reading, word errors in context and isolation, comprehension, and speed of reading. The comprehension is measured after each of the eleven oral stories by ten recall type questions and three inference type questions. Being able to recall what one has read is a skill emphasized in most reading instructional programs. It is also a measure of the lowest level of cognition.

The variables of disability in reading comprehension are diverse and complex. Compounding the problem is the lack of consensus by experts in the field as to the specifics and nature of disability of comprehension in reading. Measurement of reading comprehension for instruction is, at the present time, ambiguous and inconclusive.

Comprehension, by definition of many authors, requires the reader to be totally involved with the intent of the author. Cloze

procedure is a technique that provides an instrument to evaluate subjectively this facet of reading.

The author compiled a table of responses of the Cloze Test (Appendix A) of the large heterogeneous fourth grade population (N = 454), and a similar table of the responses of the members of the sample population who were classified at the 2.0 and 3.0 instructional grade level by the criterion instrument: (N = 106) (Appendix B). These responses were compared in Appendix C.

The researcher is convinced that the knowledgeable teacher could observe many comprehension specifics with Cloze testing techniques such as those found in Test 1, Item 12. A significant number of pupils (Heterogeneous group 42% and disabled group 44%) read through the period on the previous sentence and by so doing erred in their response. Should a group of children perform thusly in a classroom, the teacher would be provided with a direct clue for instruction. Remediation should include an opportunity for meaningful oral reading.

Item 3 on Test 1 is a second example of a reading skill deficiency directly related to comprehension. The correct response, "seeds", appears in the text three lines beyond the deletion. The skill necessary for the correct response is skimming, which is taught to primary children. Pupils in the heterogeneous population were correct 25% of the time and the disabled population were correct only 10% of the time.

Item 9, Test 3, is an example of misinformation that was apparently drawn from television and movie cartoons. The researcher was curious when it was apparent that such a large number of children had given an identical incorrect response. The response of the heterogeneous population (23%) and the disabled population (35%) was "teeth".

Inasmuch as a goose has no teeth, several children were asked why this particular deletion was so supplied. Their unanimous reply was to the effect, "You know, like Donald Duck shows his teeth when he is mad". And so he does with persistent and charming exposure, though Mr. Disney's intent was a symbolic expression of anger.

Test 2, by an accident of the deletion procedure, has six items, three of which are grouped in the last paragraph, that require a pronoun for a correct response. The researcher observed that the individual child who had not mastered the skill of referring to an antecedent, usually made an incorrect or no response at all for these items.

Table 6a and 6b eloquently point up the results of this study. Using any combination of tests to match membership grade level scores, there was a remarkable lack of consistency. The researcher ruefully observes that this lack of consistency was the only variable that could be construed as being consistent with this particular population.

Recommendations

Though the statistical analysis negates the use of Cloze Testing technique as a measure to determine the instructional reading level as a measure of comprehension for disabled readers, a different approach to the problem may prove valuable. Therefore, it is recommended that research be undertaken whereby the responses would be carefully analyzed. With this approach, the specifics of disability in reading comprehension could be identified for individual testing. The cursory examination of deletion responses reported earlier in this chapter could conceivably point the way.

Standardized reading tests usually attempt to measure many reading skills with one test. Therefore, it is recommended that tests be devised for the classroom teacher to measure specific skills rather than the current practice of attempting to measure the conglomerate of skills with a few items in subtests of one publication. It is further recommended that the proposed tests be absolutes of a specific reading skill.

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APPENDIX A

TABLE XVI

ITEM RESPONSE ANALYSIS

N = 454 Test 1 Total Items = 20 Readability = 2.0

Item 1

Sentence: The sun _____ (was) _____ warm.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
was	344	shone	2
is	47	seems	2
shined	5	no response	2
felt	3	misc. errors	49

Item 2

Sentence: The grass was green _____ (and) _____ new.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
and	362	no response	16
as	26	misc. errors	41
like	9		

Item 3

Sentence: She wanted (seeds) to eat.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
seeds	116	corn	4
something	110	much	3
some	71	me	3
grass	32	bread	3
food	19	bugs	3
grain	12	lots	2
hay	8	him	2
at	6	no response	11
fish	4	misc. errors	45

Item 4

Sentence: It was (not) a good day for the goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
not	168	had	5
such	42	are	5
really	27	will	5
was	21	has	4
the	14	never	3
quite	13	real	3
only	9	surely	2
sure	8	good	7
just	6	no response	76
some	6	misc. errors	30

Item 5

Sentence: The goose looked (at) the pony.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
at	353	around	2
for	35	over	2
like	19	no response	6
liked	6	misc. errors	28
up	3		

Item 6

Sentence: That pony _____ (is) _____ happy.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
was	217	isn't	3
is	60	seemed	3
looked	31	felt	2
wasn't	15	no response	2
looks	4	misc. errors	18

Item 7

Sentence: There may be some seeds where he is _____ (eating) _____.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
eating	125	today	8
standing	94	grazing	7
now	57	looking	7
at	31	hiding	5
going	11	lunching	2
there	9	no response	33
walking	9	misc. errors	59

Item 8

Sentence: The gray goose walked to the _____ (pony) _____.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
pony	209	gate	6
barn	39	garden	5
grass	25	house	5
horse	17	pen	4
place	16	tree	4
field	15	pasture	3
fence	14	yard	3
pond	11	bank	2
seeds	8	side	2
water	7	river	2
spot	7	no response	18
		misc. errors	32

Item 9

Sentence: "There must be seeds where you are eating," said

(the) goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
the	364	Mr.	4
gray	42	Miss	3
Mrs.	5	old	2
Mother	5	no response	11
		misc. errors	18

Item 10

Sentence: "It is not time for grass to have (seeds)."

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
seeds	275	gone	5
grown	40	water	5
was	11	bugs	4
the	9	lived	4
rain	7	flowers	4
leaves	6	any	4
eaten	6	no response	25
came	5	misc. errors	44

Item 11

Sentence: "(I) do not want grass."

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
I	329	they	3
goose	31	was	3
you	19	the	3
geese(s)	9	no response	9
pony	5	misc. errors	39
we	4		

Item 12

Sentence: The goose _____ (was) _____ not at all happy.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
said	192	seemed	2
was	191	yell	2
is	12	misc. errors	12
looked	5		

Item 13

Sentence: She bit the pony on _____ (the) _____ leg.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
the	313	front	6
his	55	her	4
hind	15	left	3
its	18	this	2
back	8	no response	5
one	7	misc. errors	18
right	6		

Item 14

Sentence: "You stop that," said _____ (the) _____ pony.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
the	398	shetland	2
mother	3	no response	5
little	2	misc. errors	18
his	2		

Item 15

Sentence: He shook his head to show the goose (he)
 was mad at her.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
he	308	really	3
that	29	it	3
she	12	were	2
pony	11	no response	29
that he	5	misc. errors	51

Item 16

Sentence: She (bit) the pony again.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
bit	365	asked	4
bite	16	liked	2
wanted	7	no response	15
kicked	5	misc. errors	36
told	4		

Item 17

Sentence: "Go away right (now) ."

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
now	374	no response	6
away	24	misc. errors	32
off (of)	11		
goose	2		

Item 18

Sentence: _____ (She) _____ said bad things to the pony.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
She	177	It	6
Goose	110	I	6
He	60	Gray goose	2
And	27	Her	2
Pony	8	no response	15
But	6	misc. errors	36

Item 19

Sentence: She made a _____ (lot) _____ of noise.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
lot	204	bit	10
funny	25	squawk	9
bad	16	awful	8
was	16	squeak	2
the	16	blast	2
had	15	sort	2
hiss	14	terrible	2
kind	11	no response	32
sound	10	misc. errors	47

Item 20

Sentence: The pony did not like that bad _____ (goose) _____

at all.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
noise	164	look	3
goose	135	pony	3
thing	42	stuff	3
word	19	no response	10
sound	18	misc. errors	39
talk	15		

* The responses included in the miscellaneous errors category are the following:

1. Not more than one entry of its kind.
2. Gross misspelling until the intent is unknown.
3. Unreadable handwriting.

TABLE XVII

ITEM RESPONSE ANALYSIS

N = 454 Test 2 Total Items = 20 Readability = 2.5

Item 1

Sentence: Everything had been just great (until)
 that gray goose had come.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
until	136	if	11
before	45	but	7
for	38	and	7
when	31	today	6
till	29	now	4
since	25	is	2
said	13	no response	34
then	13	misc. errors	45
after	12		

Item 2

Sentence: Now the day was (not) so good.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
not	204	getting	5
and	21	ever	5
over	27	as	3
going	20	being	3
was	18	almost	3
gone	15	to	3
so	14	great	3
just	14	now	2
the	13	for	2
really	12	oh	2
wasn't	6	no response	34
very	5	misc. errors	20

Item 3

Sentence: The nips _____ (on) _____ his legs hurt.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
on	159	because	2
of	90	where	2
made	59	let	2
at	24	was	2
in	18	no response	27
had	13	misc. errors	34
and	12		

Item 4

Sentence: "Gray _____ (goose) _____, leave me alone,"

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
goose	401	no response	5
pony	18	misc. errors	28
horse	3		

Item 5

Sentence: "There is nothing here _____ (for) _____ you."

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
for	326	so	4
but	29	like	3
to	18	no response	13
now	15	misc. errors	36
except	9		

Item 6

Sentence: _____ (She) _____ ran towards pony again.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
And	155	Pony	12
She	116	Him	4
Goose	32	Again	3
He	28	Her	2
Then	24	no response	17
Gray goose	14	misc. errors	54

Item 7

Sentence: By now the pony _____ (had) _____ really had enough
of that gray goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
had	233	already	7
was	105	just	4
has	17	should	4
is	10	now	2
did	10	no response	18
said	9	misc. errors	36

Item 8

Sentence: His head _____ (went) _____ down.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
went	144	dropped	3
was	128	right	3
bent	34	bend	3
hung	19	pointed	2
came	13	way	2
fell	9	stuck	2
hang	8	bow(ed)	2
looked	4	is	2
put	3	no response	10
fall	3	misc. errors	48

Item 9

Sentence: He stamped his (front) feet.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
front	188	hind	7
big	57	left	6
two	20	legs	3
long	19	strong	3
four	15	right	2
little	15	tired	2
hard	14	hoofed	2
back	12	black	2
hurt	8	no response	14
sore	8	misc. errors	57

Item 10

Sentence: He swished his (tail).

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
tail	291	mouth	4
head	69	hair	3
feet	10	body	3
leg	9	no response	15
nose	6	misc. errors	45

Item 11

Sentence: She hissed and (made) loud noises.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
made	285	over	5
hissed	41	screamed	3
was	22	squeaked	3
has	11	shouted	2
had	9	laughed	2
said	9	no response	19
did	8	misc. errors	35

Item 12

Sentence: Pony ran _____ (towards) _____ the goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
at	138	for	5
towards	86	over	4
after	78	down	4
to	49	off	3
away	24	no response	17
from	14	misc. errors	33

Item 13

Sentence: _____ (The) _____ goose knew that the pony was
much larger.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
The	181	Now	2
Gray	135	Pony	2
But	58	A	2
Then	10	Mother	2
That	9	no response	17
So	3	misc. errors	33

Item 14

Sentence: He _____ (would) _____ hurt her with his four feet.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
would	85	will	14
had	74	kicked	9
could	55	almost	5
was	46	must	5
didn't	30	then	2
did	22	no response	40
really	21	misc. errors	26
might	19		

Item 15

Sentence: She spread her (wings) and began to run
and fly towards the fence.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
wings	274	pony	2
feet	45	tail	2
legs	31	no response	25
feathers	16	misc. errors	43
head	9		

Item 16

Sentence: (She) never stopped making loud noises.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
She	215	They	7
And	54	Gray goose	4
Goose	34	You	3
He	31	no response	22
But	10	misc. errors	60
Pony	10		

Item 17

Sentence: (His) head was down.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
His	278	The	5
With	31	It	4
Her	23	Goose's	3
He's	13	As	2
Pony's	11	no response	16
And	11	misc. errors	53

Item 18

Sentence: Just as (he) got near the goose, she
rose in the air.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
he	294	it	3
pony	45	they	3
she	28	his	2
fast	3	no response	21
goose	3	misc. errors	46
the	3		

Item 19

Sentence: (She) sailed over the fence.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
She	163	They	5
And	118	Fly	2
He	36	It	2
Goose	32	no response	23
Of	15	misc. errors	49
Then	8		

Item 20

Sentence: The pony (just) stopped and looked at
the gray goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
had	145	really	3
just	45	slowly	3
was	43	couldn't	3
then	32	angrily	2
did	26	stared	2
didn't	16	now	2
stop	10	only	2
suddenly	9	would	2
never	9	no response	32
quickly	6	misc. errors	53
finally	4		

TABLE XVIII

ITEM RESPONSE ANALYSIS

N = 454 Test 3 Total Items = 21 Readability = 3.0

Item 1

Sentence: Cattle were grazing (in) the meadow.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
in	286	down	5
at	22	by	4
on	17	around	3
through	11	to	2
near	22	into	2
across	8	no response	16
over	6	misc. errors	49

Item 2

Sentence: They were paying (no) attention . . .

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
no	197	any	5
in	25	will	4
close	18	any	4
the	18	great	3
loud	15	a lot	3
was	15	around	3
good	13	on	2
at	12	near	2
their	10	most	2
much	10	little	2
some	9	happily	2
to	8	no response	32
lots	8	misc. errors	25
with	8		

Item 3

Sentence: . . . to the noisy battle between the pony and

(the) goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
the	235	nosey	3
gray	145	bad	3
mad	5	no response	15
Mr.	4	misc. errors	42
Miss	3		

Item 4

Sentence: They were enjoying the field covered with new

(green) grass.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
green	343	seeds	4
fresh	19	gray	2
grown	15	field	2
good	8	fine	2
clean	5	no response	18
pretty	5	misc. errors	34

Item 5

Sentence: There were a few flies that buzzed over (their)

backs.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
their	313	cow	5
the	45	our	4
his	13	they	2
her	10	no response	20
pony	8	misc. errors	37

Item 6

Sentence: Spotted pony (stood) by the fence.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
was	78	is	3
stood	74	came	3
ran	49	come	3
went	45	near	2
stopped	44	run	2
stand(ed)	23	fell	2
jumped	8	sat	2
stop	7	stepped	2
grazed	6	layed	2
looked	5	eat	2
walk	5	no response	19
ate	4	misc. errors	48
got	4		
jump	4		

Item 7

Sentence: (He) remained angry.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
He	231	His	5
And	67	Then	6
Pony	27	Still	6
Goose	19	But	11
She	9	no response	21
They	4	misc. errors	44
It	4		

Item 8

Sentence: The pony wanted that silly goose to (leave)
him alone.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
leave	301	set	6
fight	15	run	5
will	12	follow	4
get	11	go	4
take	10	kill	3
was	9	no response	22
stop	7	misc. errors	45

Item 9

Sentence: His legs still hurt from the sharp (bites).

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
bite(s)	102	fence	11
teeth	104	point(s)	9
bit(s)	53	feet	7
nips	24	cut(s)	7
beak(s)	23	claws	5
bill	22	nails	4
pain	18	no response	19
goose	15	misc. errors	31

Item 10

Sentence: The goose looked (at) him across the
fence.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
at	342	cross	5
for	16	mad	5
over	11	no response	21
angry	9	misc. errors	39
around	6		

Item 11

Sentence: The pony tossed (his) head.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
his	340	to	4
her	18	at	4
up	6	the	3
down	6	no response	21
back	6	misc. errors	41
its	5		

Item 12

Sentence: His (tail) was high in the air.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
head	268	neck	2
tail	69	enemy	2
feet	22	back	2
leg(s)	21	hair	2
friend	11	mane	2
ears	4	no response	23
body	2	misc. errors	20
wings	2		
goose	2		

Item 13

Sentence: The silly goose watched (him) .

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
him	303	and	2
pony	54	now	2
her	13	over	2
close(ly)	7	across	2
he	4	no response	22
careful(ly)	4	misc. errors	35
angrily	4		

Item 14

Sentence: She flapped her wings and sailed back over the
(fence).

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
fence	325	post	2
pony	15	brush	2
field	13	head	2
grass	6	said	2
meadow	10	pasture	2
yard	2	back	2
goose	3	pound	2
river	2	horse	2
hills	2	no response	22
sky	2	misc. errors	34
now	2		

Item 15

Sentence: The goose honked and (hissed).

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
honked	133	jumped	4
hissed	102	walked	4
ran (run)	31	talked	4
snorted	11	rattled	3
flew	10	kicked	3
quacked	9	sat	3
scream(ed)	9	bellered	2
laugh(ed)	9	made noise(s)	2
squealed	8	sniffed	2
looked	8	then	2
stopped	7	no response	21
flapped	6	misc. errors	41
shouted	5		
hollared	4		

Item 16

Sentence: Quickly he turned (around).

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
around	212	his head	4
back	48	to	4
and	35	and ran	2
away	25	then	2
fast	17	there	2
over	15	no response	21
toward(s)	14	misc. errors	40
again	4		

Item 17

Sentence: His feet were pounding (on) the green grass.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
on	153	toward(s)	4
in	56	along	4
at	34	up	3
down	24	back	2
hard	22	bad	2
against	17	but	2
through	14	heavily	2
around	11	across	2
to	9	no response	31
over	7	misc. errors	49
and	6		

Item 18

Sentence: The goose knew she was in (for) it
this time.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
for	153	there	3
trouble	97	around	3
the	24	right	3
danger	19	is	3
at	11	in	3
air	7	and	3
side	5	safety	2
with	5	behind	2
on	4	wall	2
all	4	it	2
this	4	his	2
fight	4	her	2
say	3	new	2
pony	3	no response	65
then	3	misc. errors	9

Item 19

Sentence: She flew back to the safe (side) of the
fence.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
side	98	him	2
place	95	his	2
spot	41	pen	2
part	34	parks	2
over	11	said	2
the	8	stop	2
to	7	direction	2
rail	7	past	2
bank	5	safe(ty)	2
across	5	path	2
end	4	at	2
ground	4	distance	2
pasture	3	up	2
were	3	bobwire	2
grass	2	wood	2
front	2	field	2
corner	2	no response	65
land	2	misc. errors	22
area	2		

Item 20Sentence: She (did) not hiss or hink.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
did	235	snorted	5
was	35	is	5
would	11	dared	4
didn't	10	kindly	3
had	9	honk	3
went	8	will	3
could	7	heard	2
further	7	jump	2
said	7	look	2
wasn't	6	no response	35
hissed	6	misc. errors	34
trotted	5		

APPENDIX B

TABLE XIX

ITEM RESPONSE ANALYSIS OF FOURTH GRADE
 DISABLED READERS: 2.0 - 3.0
 INSTRUCTIONAL LEVEL

N = 106 Test 1 Total Items = 20 Readability = 2.0

Item 1

Sentence: The sun _____ (was) _____ warm.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
was	71	warm	2
is	18	saw	2
sunning	3	no response	0
very	4	misc. errors	6

Item 2

Sentence: The grass was green _____ (and) _____ new.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
and	78	like	2
as	5	very	3
new	3	no response	3
it	2	misc. errors	7

Item 3

Sentence: She wanted (seeds) to eat.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
something	16	food	4
more	14	fish	3
some	13	wanted	3
seeds	11	nice	2
grass	10	it	2
hay	5	grain	3
only	2	no response	5
		misc. errors	12

Item 4

Sentence: It was (not) a good day for the goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
not	33	just	4
such	11	was	3
very	7	find	2
only	5	real	2
sure	5	no response	19
		misc. errors	11

Item 5

Sentence: The goose looked (at) the pony.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
at	82	up	2
like(ed)	9	no response	2
for	7	misc. errors	4

Item 6

Sentence: That pony _____ (is) _____ happy.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
was	82	no response	1
is	9	misc. errors	6
looked	7		

Item 7

Sentence: There may be some seeds where he is _____ (eating) _____.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
standing	28	thought	2
eating	24	laying	2
now	10	is	2
at	10	cool	2
yes	4	no response	11
was	3	misc. errors	14
today	3		

Item 8

Sentence: The gray goose walked to the _____ (pony) _____.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
pony	51	tree	2
barn	10	seeds	2
grass	6	spot	2
field	6	fence	2
water	5	no response	3
side	2	misc. errors	3
pond	2		

Item 9

Sentence: There must be seeds where you are eating, said

(the) goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
the	83	Mother	2
gray	10	no response	1
Mrs.	2	misc. errors	8

Item 10

Sentence: It is not time for grass to have (seeds).

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
seeds	53	goose	2
grow(n)	11	ripened	2
now	3	rain	2
green	3	no response	5
bugs	3	misc. errors	19
eat(en)	3		

Item 11

Sentence: (I) do not want grass.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
I	63	You	3
Goose	13	Goose(s)	3
Why	4	no response	3
		misc. errors	17

Item 12

Sentence: She _____ (was) _____ not at all happy.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
was	43	did	2
said	47	no response	1
is	7	misc. errors	6

Item 13

Sentence: She bit the pony _____ (on) _____ the leg.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
on	66	front	4
his	15	no response	0
its	7	misc. errors	9
back	5		

Item 14

Sentence: "You stop that," said _____ (the) _____ pony.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
the	83	the pony	2
mad	4	no response	0
pony	3	misc. errors	14

Item 15

Sentence: He shook his head to show the goose _____ (he) _____
was mad at her.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
he	56	that he	2
it	5	how	3
that	5	no response	8
she	4	misc. errors	14
what	3		

Item 16

Sentence: She (bit) the pony again.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
bit	74	wanted	3
said	7	no response	5
bite	7	misc. errors	10

Item 17

Sentence: "Go away right (now) ."

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
now	81	no response	3
know	6	misc. errors	11
away	5		

Item 18

Sentence: (She) said bad things to the pony.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
She	35	And	3
Goose	23	It	3
He	9	no response	6
Pony	5	misc. errors	19
Now	3		

Item 19

Sentence: She made a (lot) of noise.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
lot	21	bit	4
funny	14	sound	4
loud	11	awful(ly)	4
kind	8	no response	9
bunch	4	misc. errors	27

Item 20

Sentence: The pony did not like that bad (goose)
at all.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
goose	29	word(s)	5
noise	34	no response	5
thing(s)	15	misc. errors	18

TABLE XX

ITEM RESPONSE ANALYSIS OF FOURTH GRADE
 DISABLED READERS: 2.0 - 3.0
 INSTRUCTIONAL LEVEL

N = 106 Test 2 Total Items = 20 Readability = 2.5

Item 1

Sentence: Everything had been just great (until)
 that gray goose had come.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
until	27	today	3
for	14	since	2
now	7	if	2
before	7	when	2
said	7	that	2
and	5	no response	4
till	4	misc. errors	17
to	3		

Item 2

Sentence: Now the day was (not) so good.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
not	37	just	3
over	9	a	3
good	6	so	2
gone	6	very	2
happy	4	no response	8
going	4	misc. errors	22

Item 3

Sentence: The nips _____ (on) _____ his legs hurt.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
on	22	because	2
of	20	had	2
at	8	said	2
made	6	bit	2
was	5	the	2
hurt	5	no response	6
his	4	misc. errors	17
and	3		

Item 4

Sentence: "Gray _____ (goose) _____, leave me alone," he
shouted.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
goose	87	no response	2
pony	6	misc. errors	5
said	5		

Item 5

Sentence: There is nothing here _____ (for) _____ you.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
for	66	will	2
to	7	but	2
said	6	so	2
now	4	no response	6
goose	3	misc. errors	8

Item 6

Sentence: _____ (She) _____ ran towards the pony again.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
And	35	Can	3
She	15	The	3
He	7	no response	8
Then	5	misc. errors	25
Goose	5		

Item 7

Sentence: By now the pony _____ (had) _____ really had enough
of that gray goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
was	45	all	2
had	25	really	2
has	4	mad	2
said	5	no response	4
did	3	misc. errors	14

Item 8

Sentence: His head _____ (went) _____ down.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
went	44	hand(ed)	2
was	30	bowed	2
fell	2	ducked	2
hung	2	no response	2
came	2	misc. errors	17

Item 9

Sentence: He stamped his (front) feet.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
front	24	hurt	3
big	20	hard	3
little	4	fore	3
four	4	feet	2
back	4	no response	6
long	4	misc. errors	26
two	3		

Item 10

Sentence: He swished his (tail).

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
tail	50	legs	3
head	17	body	2
feet	6	front	2
hair	3	no response	4
nose(s)	3	misc. errors	16

Item 11

Sentence: She hissed and (made) loud noises.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
made	52	loud	2
hissed	13	big	2
and	4	no response	4
a	3	misc. errors	23
very	3		

Item 12

Sentence: Pony ran (towards) the goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
at	26	around	2
after	16	off	2
away	15	over	2
toward	12	no response	4
to	10	misc. errors	12
from	5		

Item 13

Sentence: (The) goose knew that the pony was
much larger.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
The	39	Then	2
Gray	29	Farm	2
But	15	no response	2
And	3	misc. errors	11
So	3		

Item 14

Sentence: He (would) hurt her with his four feet.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
would	12	didn't	2
could	10	can	2
was	16	might	2
had	12	really	2
did	6	no response	9
will	5	misc. errors	26
ran	2		

Item 15

Sentence: She spread her (wings) and began to
run and fly towards the fence.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
wings	43	apart	2
feet	15	engine	2
legs	9	no response	8
feathers	4	misc. errors	21
down	2		

Item 16

Sentence: (She) never stopped making loud noises.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
She	37	Pony	3
And	17	But	3
He	12	Then	2
Goose(s)	8	no response	5
Never	4	misc. errors	15

Item 17

Sentence: (His) head was down.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
His	56	He's	2
And	10	Pony	2
With	8	Its	2
Her	7	no response	5
Away	4	misc. errors	6
The	4		

Item 18

Sentence: Just as (he) got near the goose,
she rose in the air.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
he	61	hard	2
she	13	they	2
Pony	7	no response	4
it	2	misc. errors	13
fast	2		

Item 19

Sentence: (She) sailed over the fence.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
She	28	It	2
And	25	They	2
He	12	Was	2
Goose	4	Quickly	2
Than	3	no response	4
Pony	3	misc. errors	19

Item 20

Sentence: The pony (just) stopped and looked at
the gray goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
just	1	then	4
had	22	could	2
was	17	begin	2
did	6	and	2
didn't	5	they	2
ran	4	no response	11
stop(ed)	4	misc. errors	24

TABLE XXI

ITEM RESPONSE ANALYSIS OF FOURTH GRADE
 DISABLED READERS: 2.0 - 3.0
 INSTRUCTIONAL LEVEL

N = 106 Test 3 Total Items = 21 Readability = 3.0

Item 1

Sentence: Cattle were grazing _____ (in) _____ the meadow.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
in	56	down	2
at	8	is	2
near	6	no response	4
through (throw)	5	misc. errors	20
on	3		

Item 2

Sentence: They were paying _____ (no) _____ no attention

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
no	16	to	3
in	15	game(s)	2
the	12	there	2
at	7	together	2
good	6	no response	10
and	5	misc. errors	22
a	4		

Item 3

Sentence: . . . to the noisy battle between the pony and

(the) goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
the	51	old	2
gray	31	and	2
goose	4	no response	4
ugly	2	misc. errors	10

Item 4

Sentence: . . . field covered with new (green) grass.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
green	71	no response	6
fresh	2	misc. errors	20
summer	2		

Item 5

Sentence: There were a few flies that buzzed over

(their) backs.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
their (there)	48	head	4
the	22	flys	3
her	5	no response	8
his	4	misc. errors	12

Item 6

Sentence: Spotted pony (stood) by the fence.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
was	21	is	4
stood	13	jump	2
went	13	at	2
stop(ped)	9	no response	6
ran	7	misc. errors	24
stand(ed)	5		

Item 7

Sentence: (He) remained angry.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
He	41	Then	2
And	22	Ran	2
The	4	It	2
Pony	3	Now	2
Goose	3	no response	3
Again	2	misc. errors	20

Item 8

Sentence: The pony wanted that silly goose to (leave)
him alone.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
leave	51	was	2
fight	7	bite	2
came	4	let	2
the	3	no response	7
kill	3	misc. errors	25

Item 9

Sentence: His legs still hurt from the sharp (bites) .

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
teeth	37	goose	2
bite (bits)	14	cuts	2
beak	8	fence	2
bill	6	the	2
hurt	2	no response	4
nip	3	misc. errors	24

Item 10

Sentence: The goose looked (at) him across
the fence.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
at	72	for	3
back	4	over	2
mad	3	no response	5
angry	3	misc. errors	14

Item 11

Sentence: The pony tossed (his) head.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
his	65	at	2
down	6	to	2
her	5	no response	8
the	3	misc. errors	13
up	2		

Item 12

Sentence: His (tail) was high in the air.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
head	51	mane	2
tail	14	was	2
feet	6	no response	6
the	3	misc. errors	18
back	3		

Item 13

Sentence: The silly goose watched (him) .

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
him	61	over	2
pony	4	then	2
her	4	goose	2
carefully	3	now	2
close(ly)	3	no response	6
it	2	misc. errors	13
he	2		

Item 14

Sentence: She flapped her wings and sailed back over the
 (fence) .

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
fence	65	the	2
pony	8	no response	6
field	4	misc. errors	18
meadow	3		

Item 15

Sentence: The goose honked and (hissed).

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
honked	26	snorted	3
hissed	13	looked	2
ran	10	in	2
him	7	no response	11
laughed	3	misc. errors	26
played	3		

Item 16

Sentence: Quickly he turned (around).

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
around	30	again	3
back	11	away	2
and	11	pony	2
his	5	toward	2
to	5	him	2
in	4	no response	10
his head	3	misc. errors	16

Item 17

Sentence: His feet were pounding (on) the green grass.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
on	28	and	4
in	13	at	3
hard	8	the	3
against	6	over	2
ground	5	no response	8
down	4	misc. errors	22

Item 18

Sentence: The goose knew she was in _____ (for) _____ it
this time.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
trouble	13	it	3
for	10	the fence	2
danger	7	goose	2
the	5	his	2
this	4	and	2
new	4	no response	17
time	3	misc. errors	28
a	3		

Item 19

Sentence: She flew back to the safe _____ (side) _____ of
the fence.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
place	24	stop	3
side	9	to	2
spot	6	fence	2
over	6	back	2
part	5	no response	10
the	5	misc. errors	32

Item 20

Sentence: She _____ (did) _____ not hiss or honk.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
did	34	ran	3
was	14	the	3
would	5	made	2
had	5	no response	10
went	4	misc. errors	26

Item 21*

Sentence: The pony had won his (battle) with the
gray goose.

<u>Responses</u>	<u>Number</u>	<u>Responses</u>	<u>Number</u>
fight	39	grass	2
battle	17	war	2
game(s)	2	fit	2
feet	2	race	2
to	2	no response	10
		misc. errors	24

* Item 21 omitted for statistical purposes.

** Miscellaneous errors are those responses in which there was only one of its kind or the word was so badly misspelled that its intent was not known.

APPENDIX C

TABLE XXII

COMPARISON OF CLOZE TEST RESPONSES FROM THE HETEROGENEOUS
POPULATION OF FOURTH GRADE PUPILS AND THE SAMPLE
POPULATION OF FOURTH GRADE PUPILS
WITH READING DISABILITY

Test 1

N = 454		N = 106				
Item	Word	Number Correct	Percentage Correct	Number Correct	Percentage Correct	Per Cent Difference
1	was	344	.75	71	.67	.08
2	and	362	.79	78	.73	.06
3	seeds	116	.25	11	.10	.15
4	not	168	.37	33	.31	.06
5	at	353	.77	82	.77	.00
6	is	60	.11	9	.08	.03
7	eating	125	.27	24	.22	.05
8	pony	209	.48	51	.48	.00
9	the	364	.80	83	.77	.03
10	seeds	275	.60	53	.50	.10
11	I	329	.72	63	.59	.13
12	was	191	.44	43	.40	.04
13	the	313	.68	66	.62	.06
14	the	398	.87	83	.77	.10
15	he	308	.67	56	.53	.14
16	bit	365	.80	74	.70	.10
17	now	374	.82	81	.76	.06
18	she	177	.37	35	.33	.04
19	lot	204	.48	21	.19	.29
20	goose	135	.28	29	.27	.01
Means :			.566		.489	.076

Test 2

1	until	136	.29	27	.25	.04
2	not	204	.47	37	.35	.12
3	on	159	.35	22	.21	.14
4	goose	401	.88	87	.82	.06
5	for	326	.81	66	.62	.09

Item	Word	Number Correct	Percentage Correct	Number Correct	Percentage Correct	Per Cent Difference
6	she	116	.25	14	.14	.11
7	had	233	.51	25	.23	.28
8	went	144	.30	44	.42	.12
9	front	188	.43	24	.23	.20
10	tail	291	.64	50	.47	.17
11	made	285	.62	52	.49	.13
12	toward	86	.19	12	.10	.09
13	the	101	.42	39	.36	.06
14	would	85	.19	12	.10	.09
15	wings	274	.60	43	.42	.18
16	She	215	.50	37	.35	.15
17	His	278	.61	56	.53	.08
18	he	294	.64	61	.57	.07
19	She	163	.35	28	.26	.09
20	just	45	.10	1	.01	.09
Means:			.453		.346	.118

Test 3						
Item	Word	Number Correct	Percentage Correct	Number Correct	Percentage Correct	Per Cent Difference
1	in	286	.63	56	.52	.11
2	no	197	.45	16	.15	.30
3	the	235	.52	51	.48	.04
4	green	343	.75	71	.67	.08
5	their	313	.69	48	.45	.24
6	stood	74	.16	13	.10	.06
7	he	231	.50	41	.38	.12
8	leave	301	.66	51	.48	.18
9	bites	102	.22	14	.13	.09
10	at	342	.75	72	.68	.07
11	his	340	.75	65	.61	.14
12	tail	69	.15	14	.10	.05
13	him	303	.66	61	.57	.09
14	fence	325	.71	65	.61	.10
15	hissed	102	.22	13	.10	.12
16	around	212	.48	30	.28	.20
17	on	153	.33	28	.26	.07
18	for	153	.33	10	.09	.24
19	side	98	.21	9	.08	.13
20	did	235	.50	34	.32	.18
21	battle	181	.42	17	.15	.27
Means:			.48		.343	.137

SUMMARY

Mean %	N = 454 % Correct	N = 106 % Correct	Per Cent Difference
Test 1	.56	.48	.07
Test 2	.45	.34	.11
Test 3	.48	.34	.13

APPENDIX D

THE CLOZE TEST

Cloze Test Instructions

Name _____ Grade _____ Date _____

Teacher _____ School _____

(The teacher will read the instructions aloud.)

Write your full name, grade, teacher, date, and the name of your school in the spaces above. Do it now.

This is a test to see how well you can read. It was made by taking every tenth word out of some stories and putting in blanks. You are to guess what word has been left out. Write this word in the blank. Here is an example:

Sam went _____ a walk.

You might guess that the word "for" was taken out. You would then write it in the blank like this:

Sam went for a walk.

Here is another example:

Susan _____ be late for school today.

The word "will" was left out. Write the word "will" in the blank space.

What word has been left out of this sentence?

Jim is in the third _____ in school.

Write the word in the blank that you think makes sense.

All of the blanks are exactly the same size, but the words that go in them may be long or short. Be very sure you write only one word in each blank. Do not worry about spelling a word. Do the best you can. Your teacher may not help you to guess the words. Try to fill every blank, but don't be afraid to guess. Some stories may be hard to read, but even these will have some easy blanks.

It was a good day. The sun _____ warm. The pony ate grass. The grass was green _____ new. A big gray goose ate grass. She wanted _____ to eat. She could only find grass. It was _____ a good day for the goose. The goose looked _____ the pony. The goose was not happy.

"That pony _____ happy. There may be some seeds where he is _____," said the goose. The gray goose walked to the _____. "There must be seeds where you are eating," said _____ goose.

"It is not time for grass to have _____," said the pony. "You will have to eat grass."

"_____ do not want grass. I want seeds." The goose _____ not at all happy. She bit the pony on _____ leg.

The pony was surprised. "You stop that!" said _____. pony. He shook his head to show the goose _____ was mad at her.

The goose was mad. She _____ the pony again.

"Goose, go away! Go away right _____!" said the pony.

The goose did not go away. _____ said bad things to the pony. She made a _____ of noise. The pony did not like that bad _____ at all.

Everything had been just great _____ that gray goose had come. Now the day was _____ so good. The spotted pony was angry. The nips _____ his legs hurt. He had not finished breakfast.

"Gray _____, leave me alone," he shouted. There is nothing here _____ you.

The goose was still very angry. She hissed. _____ ran towards the pony again.

By now the pony _____ really had enough of that gray goose. His head _____ down. He blew through his nose. He stamped his _____ feet. He stamped his back feet. He swished his _____.

The goose just looked at pony. She hissed and _____ loud noises.

That really was too much. Pony ran _____ the goose. He wanted to chase gray goose away. _____ goose knew that the pony was much larger. He _____ hurt her with his four feet. She spread her _____ and began to run and fly towards the fence. _____ never stopped making loud noises.

The pony ran fast. _____ head was down. His tail was flying. Just as _____ got near the goose, she rose in the air. _____ sailed over the fence. She was safe. The pony _____ stopped and looked at the gray goose.

Cattle were grazing _____ the meadow. It had been peaceful. They were paying _____ attention to the noisy battle between the pony and _____ goose. They were enjoying the field covered with new _____ grass. There were a few flies that buzzed over _____ backs. They were not very bothersome.

The spotted pony _____ by the fence. He snorted and stamped his feet. _____ remained angry. The pony wanted that silly goose to _____ him alone. His legs still hurt from the sharp _____. Now he wanted to finish breakfast. The goose looked _____ him across the fence. She hissed. The pony tossed _____ head. He trotted away towards his grazing spot. His _____ was high in the air.

The silly goose watched _____. She flapped her wings and sailed back over the _____. She started towards the pony. The goose honked and _____.

The spotted pony heard the goose. Quickly he turned _____. He raced towards the goose. His feet were pounding _____ the green grass. The goose knew she was in _____ it this time. She flew back to the safe _____ of the fence. She paraded back and forth. She _____ not hiss or honk. The pony had won his _____ with the gray goose.

APPENDIX E

N = 191

TABULATION OF SAMPLE POPULATION TEST SCORES

Subject	S.R.I.	Cloze Test			Equiv. Grade Level	Stanford Comprehension		Stanford Word Meaning	
		2.0	2.5	3.0		Raw Scores	Gr. Level	Raw Scores	Gr. Level
1	4.5	11	11	9	3.0	38	3.3	23	3.3
2	3.0	13	4	8	3.0	36	3.0	24	3.5
3	4.0	12	9	0	2.5	37	3.2	26	3.7
4	3.5	13	8	7	3.0	39	3.4	22	3.2
5	3.0	12	9	0	2.5	37	3.2	26	3.7
6	2.0	13	11	8	2.0	22	2.0	29	4.2
7	3.5	9	11	7	3.0	39	3.4	22	3.2
8	3.5	11	15	13	3.5	43	3.9	26	3.7
9	3.0	13	12	12	3.5	42	3.7	27	3.8
10	3.0	14	13	8	3.5	20	2.1	25	3.6
11	3.5	9	4	2	2.0	45	4.1	24	3.5
12	3.0	16	12	12	3.5	40	3.5	26	3.7
13	3.5	13	13	16	3.5	57	4.8	29	4.2
14	3.0	12	7	10	3.0	36	3.1	18	2.8
15	3.5	14	11	11	3.0	41	3.6	27	3.8
16	2.0	12	9	11	3.0	35	3.1	19	2.9
17	3.5	8	7	7	3.0	38	3.3	23	3.3
18	2.0	11	11	7	3.0	19	2.1	18	2.8
19	3.0	11	5	3	2.0	25	2.5	25	3.6
20	3.5	9	8	11	3.0	42	3.7	27	3.7
21	4.0	14	9	10	3.0	46	4.2	29	4.2
22	3.0	10	6	7	3.0	40	3.5	20	3.0
23	3.0	8	9	10	3.0	44	4.0	23	3.3
24	3.0	12	9	4	2.5	23	2.4	25	3.6
25	4.0	14	12	14	3.5	51	5.0	28	4.0
26	4.0	16	11	15	3.5	40	3.5	31	4.7

Subject	S.R.I.	Cloze Test			Grade Level	Comprehension		Word Meaning	
		2.0	2.5	3.0		Raw Scores	Gr. Level	Raw Scores	Gr. Level
27	2.0	10	4	5	2.0	33	3.0	20	3.0
28	3.5	8	4	3	2.0	31	2.9	24	3.5
29	3.0	10	2	0	2.0	37	3.2	25	3.6
30	3.5	9	5	9	3.0	24	2.4	21	3.1
31	4.0	9	12	11	3.0	42	3.7	28	4.0
32	3.0	6	5	3	1.5	34	3.0	15	2.6
33	3.0	12	13	14	3.5	42	3.7	23	3.3
34	3.0	3	4	5	1.5	38	3.3	26	3.7
35	2.0	13	11	10	3.0	37	3.2	28	4.0
36	4.0	12	11	11	3.0	37	3.2	25	3.6
37	3.5	8	9	7	3.0	42	3.7	24	3.5
38	3.0	12	11	10	3.0	39	3.4	10	2.9
39	4.0	11	10	12	3.5	42	3.7	28	4.0
40	3.0	10	12	11	3.0	33	3.0	28	4.0
41	3.5	8	8	3	2.5	41	3.6	23	3.3
42	2.0	13	8	8	3.0	34	3.0	24	3.5
43	3.5	14	8	11	3.0	39	3.4	25	3.6
44	2.0	5	2	2	1.5	38	3.3	20	3.0
45	2.0	11	6	8	3.0	35	3.1	16	2.7
46	2.0	11	3	4	3.0	23	2.4	13	2.3
47	3.5	16	9	9	3.0	42	3.7	22	3.2
48	2.0	8	7	7	3.0	37	3.2	12	2.1
49	3.0	10	12	12	3.5	39	3.4	25	3.6
50	2.0	6	7	4	2.5	26	2.5	21	3.1
51	3.5	9	7	6	2.5	41	3.6	27	3.8
52	3.0	15	9	10	3.0	29	2.7	20	3.0
53	3.0	8	8	12	3.5	38	3.3	23	3.3
54	3.0	7	7	5	2.5	16	1.9	16	2.7
55	3.5	10	9	9	3.0	41	3.6	25	3.6
56	2.0	7	11	9	3.0	30	2.8	20	3.0
57	1.5	6	0	0	1.5	6	1.5	18	2.8
58	3.5	12	12	14	3.5	41	3.6	25	3.6

Subject	S.R.I.	Cloze Test			Grade Level	Comprehension		Word Meaning	
		2.0	2.5	3.0		Raw Scores	Gr. Level	Raw Scores	Gr. Level
59	3.0	9	3	8	3.0	32	2.9	25	3.6
60	3.0	13	13	13	3.5	38	3.3	28	4.0
61	3.5	7	6	11	3.0	49	4.6	29	4.2
62	3.0	9	8	9	3.0	20	2.1	26	3.7
63	3.0	8	10	11	3.0	42	3.7	25	3.6
64	3.5	7	5	7	3.0	43	3.9	29	4.2
65	3.5	3	2	10	3.0	17	2.0	24	3.5
66	3.5	15	10	11	3.0	38	3.3	25	3.6
67	3.5	8	7	11	3.0	37	3.2	26	3.7
68	3.0	8	13	7	3.0	32	2.9	21	3.1
69	3.5	11	11	15	3.5	38	3.3	22	3.2
70	3.5	7	5	7	3.0	44	4.0	29	4.2
71	3.5	14	14	10	3.0	46	4.2	29	4.2
72	2.0	12	8	9	3.0	37	3.2	20	3.0
73	3.0	12	10	8	3.0	43	3.9	19	2.9
74	3.0	7	3	8	3.0	36	3.1	23	3.3
75	2.0	12	4	11	3.0	31	2.9	20	3.0
76	3.5	10	11	11	3.0	36	3.1	31	4.7
77	2.0	6	4	6	1.5	16	1.9	18	2.8
78	3.0	5	6	9	3.0	26	2.5	24	3.5
79	3.0	13	10	10	3.0	27	2.6	27	3.8
80	3.0	12	7	9	3.0	39	3.4	23	3.3
81	3.5	12	6	8	3.0	49	4.6	28	4.0
82	3.5	9	6	7	3.0	40	3.5	22	3.2
83	3.0	13	9	6	2.5	37	3.2	20	3.0
84	3.0	11	6	7	3.0	34	3.0	25	3.6
85	1.5	2	1	0	1.5	13	1.8	11	2.0
86	4.0	12	9	12	3.5	41	3.6	23	3.3
87	3.0	5	7	2	2.5	35	3.1	24	3.5
88	3.5	11	9	8	3.0	48	4.4	30	4.4
89	3.0	15	11	13	3.5	33	3.0	23	3.3
90	2.0	9	9	8	3.0	18	2.0	23	3.3

Subject	S.R.I.	Cloze Test			Grade Level	Comprehension		Word Meaning	
		2.0	2.5	3.0		Raw Scores	Gr. Level	Raw Scores	Gr. Level
91	3.5	15	10	12	3.5	47	4.3	26	3.7
92	4.0	8	5	9	3.0	39	3.4	31	4.7
93	2.0	8	6	3	2.0	32	2.9	16	2.7
94	3.0	1	0	3	1.5	42	3.7	24	3.5
95	3.0	8	4	2	2.0	20	2.1	14	2.5
96	4.0	15	11	14	3.5	44	4.0	26	3.7
97	3.0	8	14	11	3.0	36	3.1	24	3.5
98	3.0	10	8	14	3.5	36	3.1	25	3.6
99	3.0	9	2	4	2.0	36	3.1	26	3.7
100	3.0	13	10	11	3.0	44	4.0	27	3.8
101	2.0	13	13	11	3.0	18	2.0	15	2.7
102	3.0	14	5	7	3.0	37	3.2	20	3.0
103	3.0	10	7	11	3.0	31	2.9	29	4.2
104	3.5	12	8	11	3.0	41	3.6	24	3.5
105	3.0	11	10	9	3.0	42	3.7	19	2.9
106	3.0	12	12	9	3.0	41	3.6	23	3.3
107	4.0	10	9	3	2.5	41	3.6	27	3.8
108	4.0	12	11	10	3.0	48	4.4	24	3.5
109	2.0	8	2	1	2.0	16	1.9	16	2.7
110	3.5	5	8	11	3.0	35	3.1	20	3.0
111	3.5	9	5	0	2.0	41	3.6	23	3.3
112	3.0	7	2	0	2.0	22	2.3	21	3.1
113	2.0	12	10	9	3.0	42	3.7	22	3.2
114	2.0	13	5	4	2.0	24	2.4	17	2.7
115	3.5	13	10	11	3.0	41	2.6	29	4.2
116	3.0	15	9	9	3.0	38	3.2	24	3.5
117	3.0	13	6	10	3.0	33	3.0	20	3.0
118	2.0	4	1	3	1.5	30	2.8	20	3.0
119	3.0	13	16	8	3.0	35	3.1	18	2.8
120	3.5	10	5	9	3.0	38	3.3	25	3.6
121	3.0	10	9	7	3.0	37	3.2	19	2.9
122	3.5	7	3	5	2.0	31	2.9	26	3.7

Subject	S.R.I.	Cloze Test			Grade Level	Comprehension		Word Meaning	
		2.0	2.5	3.0		Raw Scores	Gr. Level	Raw Scores	Gr. Level
123	3.0	13	7	8	3.0	35	3.1	22	3.2
124	3.0	9	10	12	3.5	34	3.0	26	3.7
125	3.0	10	8	7	3.0	40	3.5	21	3.1
126	3.5	14	11	10	3.0	44	4.0	23	3.3
127	3.5	12	12	13	3.5	40	3.5	24	3.5
128	2.5	4	7	8	3.0	17	2.0	23	3.3
129	3.0	13	6	10	3.0	43	3.9	24	3.5
130	3.0	16	8	5	2.5	42	3.7	20	3.0
131	3.5	10	12	9	3.0	44	4.0	27	3.8
132	2.0	10	6	9	3.0	18	2.0	19	2.9
133	3.5	14	7	14	3.5	35	3.1	26	3.7
134	3.5	16	11	8	3.0	31	2.9	30	4.4
135	3.5	6	5	10	3.0	36	3.1	28	4.0
136	3.0	9	0	0	2.0	40	3.5	29	4.2
137	4.0	13	15	15	3.5	51	5.0	28	4.0
138	2.0	11	3	5	2.0	20	2.1	13	2.3
139	3.0	11	9	8	3.0	28	2.6	22	3.2
140	3.5	12	11	9	3.0	47	4.3	29	4.2
141	3.0	8	5	9	3.0	37	3.2	23	3.3
142	3.0	10	6	9	3.0	33	3.0	22	3.2
143	3.0	9	1	7	3.0	22	2.3	22	3.2
144	4.0	14	16	14	3.5	45	4.1	30	4.4
145	3.0	5	9	9	3.0	43	3.9	23	3.3
146	3.0	11	10	10	3.0	38	3.3	22	3.2
147	3.0	11	9	12	3.5	40	3.5	21	3.1
148	2.0	11	6	7	3.0	37	3.2	17	2.7
149	3.0	11	9	12	3.5	43	3.9	23	3.3
150	2.0	9	11	4	2.5	26	2.5	19	2.9
151	3.5	14	5	11	3.0	38	3.3	24	3.5
152	3.5	14	9	13	3.5	37	3.2	27	3.8
153	2.0	8	6	1	2.0	7	1.5	13	2.3
154	4.0	10	10	9	3.0	35	3.1	26	3.7
155	3.5	12	8	11	3.0	39	3.4	20	3.0

Subject	S.R.I.	Cloze Test			Grade Level	Comprehension		Word Meaning	
		2.0	2.5	3.0		Raw Scores	Gr. Level	Raw Scores	Gr. Level
156	3.0	11	7	8	3.0	33	3.0	20	3.0
157	4.0	9	9	10	3.0	38	3.3	30	4.4
158	3.0	7	5	6	3.0	34	3.0	20	3.0
159	3.5	9	10	10	3.0	32	2.9	28	4.0
160	4.0	14	12	12	3.5	48	4.4	25	3.6
161	3.0	8	8	7	3.0	40	3.2	23	3.3
162	3.5	4	7	7	3.0	26	2.5	25	3.6
163	3.0	6	2	6	1.5	32	2.9	25	3.6
164	3.5	11	4	8	3.0	40	3.5	18	2.8
165	3.0	8	4	6	2.0	34	3.0	20	3.0
166	2.0	8	6	5	2.0	39	3.4	24	3.5
167	3.0	7	2	0	2.0	14	1.8	20	3.0
168	3.5	10	11	10	3.0	38	3.3	23	3.3
169	3.0	11	9	8	3.0	43	3.9	25	3.6
170	3.0	10	3	8	3.0	26	2.5	23	3.3
171	3.0	10	10	7	3.0	33	3.0	25	3.6
172	4.0	15	13	12	3.5	40	3.5	27	3.8
173	3.5	11	11	9	3.0	41	3.6	26	3.7
174	3.5	14	16	14	3.5	45	4.1	30	4.4
175	4.0	13	13	11	3.0	48	4.4	31	4.7
176	1.5	3	6	0	1.5	43	3.9	28	4.0
177	2.0	9	4	6	2.0	35	3.1	23	3.3
178	2.0	10	5	7	3.0	32	2.0	22	3.2
179	2.0	3	3	1	1.5	32	2.9	21	3.1
180	2.0	12	1	0	2.0	27	2.6	15	2.6
181	2.0	4	6	2	1.5	18	2.0	11	2.0
182	1.5	2	1	0	1.5	16	1.9	12	2.1
183	4.0	11	11	15	3.5	35	3.2	19	2.9
184	4.0	8	10	11	3.0	42	3.7	25	3.6
185	5.0	11	12	12	3.5	37	3.2	24	3.5
186	4.0	11	12	9	3.0	45	4.1	30	2.8
187	3.5	14	12	15	3.5	44	4.0	29	4.2

Subject	S.R.I.	Cloze Test			Grade Level	Comprehension		Word Meaning	
		2.0	2.5	3.0		Raw Scores	Gr. Level	Raw Scores	Gr. Level
188	4.0	13	9	11	3.0	42	3.7	28	4.0
189	3.5	10	13	11	3.0	39	3.4	24	3.5
190	3.5	11	5	13	3.5	36	3.1	23	3.3
191	3.5	14	6	9	3.0	45	4.2	28	4.0

TABLE XXIII

STANDARD READING INVENTORY DISTRIBUTION OF CLOZE SCORES N=191

1.5 N = 4					3.0 N = 72				
Subject	Cloze Raw Scores			Grade	Subject	Cloze Raw Scores			Grade
	2.0	2.5	3.0	Equiv.		2.0	2.5	3.0	Equiv.
57	6	0	0	1.5	2	11	11	9	3.0
85	2	1	0	1.5	5	12	9	0	2.5
176	3	6	0	1.5	6	14	11	8	3.0
182	2	1	0	1.5	9	13	12	12	3.5
					10	14	13	8	3.0
					12	16	12	12	3.5
					14	12	7	10	3.0
					19	11	5	3	2.0
					22	10	6	7	3.0
					23	8	9	10	3.0
					24	12	8	4	2.5
					29	10	2	0	2.0
					32	6	5	3	1.5
					33	12	13	14	3.5
					34	3	4	5	1.5
					38	12	11	10	3.0
					40	10	12	11	3.0
					49	10	12	12	3.5
					53	8	8	12	3.5
					54	7	7	5	2.5
					59	9	3	8	3.0
					60	13	13	13	3.5
					62	9	8	9	3.0
					63	8	10	11	3.0
					68	8	13	7	3.0
					73	12	10	8	3.0
					74	7	3	8	3.0
					78	5	6	9	3.0
					79	13	10	10	3.0
					80	12	7	9	3.0
					83	13	9	6	2.5
					84	11	6	7	3.0
					87	5	7	2	2.5
					89	15	11	13	3.5
					94	1	0	3	1.5
					95	8	4	2	2.0
					97	8	14	11	3.0
					98	11	8	14	3.5
					99	8	2	4	2.0
					100	13	10	11	3.0
					102	14	5	7	3.0

2.0 N = 34				
Subject	Cloze Raw Scores			Grade
	2.0	2.5	3.0	Equiv.
16	12	9	11	3.0
18	11	11	7	3.0
27	10	4	5	2.0
35	13	11	10	3.0
42	13	8	8	3.0
44	5	2	2	1.5
45	11	6	8	3.0
46	11	3	4	2.0
48	8	8	7	3.0
50	6	7	4	2.5
52	15	9	10	3.0
56	7	11	9	3.0
72	12	8	9	3.0
75	12	4	11	3.0
77	6	4	6	1.5
90	9	9	8	3.0
93	8	6	3	2.0
101	3	3	1	1.5
109	8	2	1	2.0
113	12	10	9	3.0
114	13	5	4	2.0
118	4	1	3	1.5
128	4	7	6	2.5
132	10	6	9	3.0
138	11	3	5	2.0
148	11	6	7	3.0
150	9	11	4	2.5
153	8	6	1	2.0
166	8	6	5	2.0
177	9	4	6	2.0
178	10	5	7	3.0
179	3	3	1	1.5
180	12	1	0	2.0
181	4	6	2	1.5

3.0 Continued				
Subject	Cloze Raw Scores			Grade Equiv.
	2.0	2.5	3.0	
103	10	7	11	3.0
105	11	10	9	3.0
106	12	12	9	3.0
112	7	2	0	2.0
116	15	9	9	3.0
117	13	6	10	3.0
119	13	16	8	3.0
121	10	9	7	3.0
123	13	7	8	3.0
124	9	10	12	3.5
125	10	8	7	3.0
129	13	6	10	3.0
130	16	8	5	2.5
136	9	0	0	2.0
139	11	8	9	3.0
141	8	5	9	3.0
142	10	6	9	3.0
143	9	1	7	3.0
145	5	9	9	3.0
146	11	10	10	3.0
147	11	9	12	3.5
149	12	9	12	3.5
156	11	7	8	3.0
158	7	5	6	2.0
161	8	8	7	3.0
163	6	2	6	1.5
165	9	4	6	2.0
167	7	2	0	2.0
169	11	9	8	3.0
170	10	3	8	3.0
171	10	10	7	3.0

3.5+ N = 56				
Subject	2.0	2.5	3.0	Grade Equiv.
4	13	8	7	3.0
7	9	11	7	3.0
8	11	15	13	3.5
11	9	4	2	2.0
13	13	13	16	3.5
15	14	11	11	3.0
17	9	8	11	3.0
20	9	8	11	3.0
28	8	4	3	2.0
30	8	5	9	3.0
37	8	9	7	3.0
41	8	8	3	2.5
43	14	8	11	3.0
47	16	9	9	3.0
51	9	7	6	2.5
55	10	9	9	3.0

3.5+ Continued				
Subject	Cloze Raw Scores			Grade Equiv.
	2.0	2.5	3.0	
58	12	12	14	3.5
61	7	6	11	3.0
64	7	5	7	3.0
65	3	2	10	3.0
66	15	10	11	3.0
67	8	7	11	3.0
69	11	11	15	3.5
70	7	5	7	3.0
71	14	14	10	3.0
76	10	10	11	3.0
81	12	6	8	3.0
82	9	6	7	3.0
88	11	9	8	3.0
91	15	10	12	3.5
104	12	7	11	3.0
110	5	8	11	3.0
111	9	5	0	2.0
115	13	10	11	3.0
120	10	5	9	3.0
122	7	3	5	2.0
126	14	11	10	3.0
127	12	12	13	3.5
131	10	12	9	3.0
133	14	7	4	2.5
134	16	11	8	3.0
135	6	5	10	3.0
140	12	11	9	3.0
151	14	5	11	3.0
152	14	9	13	3.5
155	12	8	11	3.0
159	9	10	10	3.0
162	4	7	7	3.0
164	11	4	8	3.0
168	10	11	10	3.0
173	11	11	9	3.0
174	14	16	14	3.5
187	14	12	15	4.0
189	10	13	11	3.0
190	11	5	13	3.5
191	14	6	9	3.0
1	11	11	9	3.0
3	12	9	0	2.5
21	14	9	10	3.0
25	14	12	12	3.5
26	16	11	15	3.5
31	9	12	11	3.0
36	12	11	11	3.0
39	11	10	12	3.5
86	12	9	12	3.5
92	8	5	9	3.0

Subject	Cloze Raw Scores			Grade Equiv.
	2.0	2.5	3.0	
96	15	11	14	3.5
107	10	9	3	2.5
108	12	11	10	3.0
137	13	15	15	3.5
144	14	16	14	3.5
154	10	9	9	3.0
157	9	9	10	3.0
160	14	12	12	3.5
172	15	13	12	3.5
175	13	13	11	3.0
183	11	11	15	3.5
184	8	10	11	3.0
185	11	12	12	3.5
186	11	12	9	3.0
188	13	9	11	3.0

TABLE XXIV
STANFORD COMPREHENSION TEST DISTRIBUTION
OF CLOZE SCORES

1.5 - 1.9						2.5 - 2.9					
N = 8						Continued					
Subj.	Stan Gr.L.	Cloze 2.0	Raw 2.5	Scores 3.0	Grade Equiv.	Subj.	Stan Gr.L.	Cloze 2.0	Raw 2.5	Scores 3.0	Grade Equiv.
54	1.9	7	7	5	2.5	59	2.9	9	3	8	3.0
57	1.5	6	0	0	1.5	68	2.9	8	13	7	3.0
77	1.9	6	4	6	1.5	75	2.9	12	4	11	3.0
85	1.8	2	1	0	1.5	78	2.5	5	6	9	3.0
109	1.9	8	2	1	1.5	79	2.6	13	10	10	3.0
153	1.5	8	6	2	2.0	93	2.9	8	6	3	2.0
167	1.8	7	2	0	2.0	103	2.9	10	7	11	3.0
182	1.9	2	1	0	1.5	118	2.8	4	1	3	1.5
Means:	1.77	5.75	2.87	1.62	1.75	122	2.9	7	3	5	2.0
2.0 - 2.4						3.0 - 3.4					
N = 17						N = 72					
10	2.1	14	13	8	3.0	1	3.3	11	11	9	3.0
18	2.1	11	11	7	3.0	2	3.1	13	4	8	3.0
24	2.4	12	8	4	2.5	3	3.2	12	9	0	2.5
30	2.4	9	5	4	2.5	4	3.4	13	8	7	3.0
46	2.4	11	3	4	2.0	5	3.0	12	9	0	2.5
62	2.1	9	8	9	3.0	6	3.0	14	11	8	3.0
65	2.0	3	2	10	3.0	7	3.4	9	11	7	3.0
90	2.0	9	9	8	3.0	14	3.1	12	7	10	3.0
95	2.1	8	4	2	2.0	16	3.1	12	9	11	3.0
101	2.0	3	3	1	1.5	17	3.3	8	7	7	3.0
112	2.3	7	2	0	2.0	27	3.0	10	4	5	3.0
114	2.4	13	5	4	2.0	29	3.2	10	?	0	3.0
128	2.0	4	7	6	2.5	32	3.0	6	5	3	1.5
132	2.0	10	6	9	3.0	34	3.3	3	4	5	1.5
138	2.1	11	3	5	2.0	35	3.2	13	11	10	3.0
143	2.3	9	1	7	3.0	36	3.2	12	11	11	3.0
181	2.0	4	6	2	1.5	38	3.4	12	11	10	3.0
Means:	2.15	8.61	5.61	5.58	2.42						
2.5 - 2.9						3.5 - 3.9					
N = 24						N = 24					
19	2.5	11	5	3	2.0	41	3.5	11	11	11	3.0
28	2.9	8	4	3	2.0	42	3.5	11	11	11	3.0
50	2.5	6	7	4	2.5	43	3.5	11	11	11	3.0
52	2.7	15	9	10	3.0	44	3.5	11	11	11	3.0
56	2.8	7	11	9	3.0	45	3.5	11	11	11	3.0

3.0 - 3.4 Continued					
Stan	Cloze	Raw Scores			Grade
Subj.	Gr.L.	2.0	2.5	3.0	Equiv.
40	3.0	10	12	11	3.0
42	3.0	13	8	8	3.0
43	3.4	14	8	11	3.0
44	3.3	5	2	2	1.5
45	3.1	11	6	8	3.0
48	3.2	8	8	7	3.0
49	3.4	10	12	12	3.5
53	3.3	8	8	12	3.5
60	3.0	13	13	13	3.5
66	3.3	15	10	11	3.0
67	3.2	8	7	11	3.0
69	3.3	11	11	15	3.5
72	3.2	12	8	9	3.0
74	3.1	7	3	8	3.0
76	3.1	10	11	11	3.0
80	3.0	12	7	9	3.0
83	3.2	13	9	6	2.5
84	3.0	11	6	7	3.0
87	3.1	5	7	2	2.5
89	3.0	15	11	13	3.5
92	3.4	8	5	9	3.0
97	3.1	8	14	11	3.0
98	3.1	11	8	14	3.5
99	3.1	9	2	4	2.0
102	3.2	14	5	7	3.0
110	3.1	5	8	11	3.0
116	3.2	15	9	9	3.0
117	3.0	13	6	10	3.0
119	3.1	13	16	8	3.0
120	3.3	10	5	9	3.0
121	3.2	10	9	7	3.0
123	3.1	13	7	8	3.0
124	3.0	9	10	12	3.5
133	3.1	14	7	4	2.5
135	3.1	6	5	10	3.0
141	3.2	8	5	9	3.0
142	3.0	10	6	9	3.0
146	3.3	11	10	10	3.0
148	3.2	11	6	7	3.0
151	3.3	14	5	11	3.0
152	3.2	14	9	13	3.5
154	3.1	10	10	9	3.0
155	3.4	12	8	11	3.0
156	3.0	11	7	8	3.0
157	3.3	9	9	10	3.0
158	3.0	7	5	6	2.0
165	3.0	9	4	6	2.0
166	3.4	8	6	5	2.0

3.0 - 3.4 Continued					
Stan	Cloze	Raw Scores			Grade
Subj.	Gr.L.	2.0	2.5	3.0	Equiv.
168	3.3	10	11	10	3.0
171	3.0	10	10	7	3.0
177	3.1	9	4	6	2.0
183	3.1	11	11	15	3.5
185	3.2	11	11	12	3.5
189	3.4	10	13	11	3.0
190	3.1	11	5	13	3.5
Means: 3.18 10.51 8.08 8.72 2.61					

3.5+ N = 70					
8	3.9	15	11	13	3.5
9	3.7	13	12	12	3.5
11	4.1	8	4	2	2.0
12	3.5	16	12	12	3.5
13	4.8	13	13	16	3.5
15	3.6	14	11	11	3.0
20	3.7	8	9	11	3.0
21	4.2	14	9	10	3.0
22	3.5	10	6	7	3.0
23	4.0	8	9	10	3.0
25	5.0	14	12	14	3.5
26	3.5	16	11	15	3.5
31	3.7	9	12	11	3.0
33	3.7	12	13	14	3.5
37	3.7	8	9	7	3.0
39	3.7	11	10	12	3.5
41	3.6	8	8	3	2.5
47	3.7	16	9	9	3.0
51	3.6	9	7	6	2.5
55	3.6	10	9	9	3.0
58	3.6	12	12	14	3.5
61	4.6	7	6	11	3.0
63	3.7	8	10	11	3.0
64	3.9	7	5	7	3.0
70	4.0	7	5	7	3.0
71	4.2	14	14	10	3.0
73	3.9	12	10	8	3.0
81	4.6	12	7	8	3.0
82	3.5	9	6	7	3.0
86	3.6	12	9	12	3.5
88	4.4	11	9	8	3.0
91	4.3	15	10	12	3.5
94	3.7	1	0	3	1.5
96	4.0	15	11	14	3.5
100	4.0	13	10	11	3.0

Subj.	3.5+	Continued			Grade Equiv.
	Star Gr.L.	Cloze 2.0	Raw 2.5	Scores 3.0	
104	3.6	12	7	11	3.0
105	3.7	11	10	9	3.0
106	3.6	12	12	9	3.0
107	3.6	10	9	3	2.5
108	4.4	12	11	10	3.0
111	3.6	9	5	0	2.0
113	3.7	12	10	9	3.0
115	3.6	13	10	10	3.0
125	3.5	10	8	7	3.0
126	4.0	14	11	10	3.0
127	3.5	12	12	13	3.5
129	3.9	13	6	10	3.0
130	3.7	16	8	5	2.5
131	4.0	10	12	9	3.0
136	3.5	9	0	0	2.0
137	5.0	13	15	15	3.5
140	4.3	12	11	9	3.0
144	4.1	14	16	14	3.5
145	3.9	5	9	9	3.0
147	3.5	11	9	12	3.5
149	3.9	12	9	12	3.5
160	4.4	14	12	12	3.5
161	3.5	8	8	7	3.0
164	3.5	11	4	8	3.0
169	3.9	11	9	8	3.0
172	3.5	15	13	12	3.5
173	3.6	11	11	9	3.0
174	4.1	14	16	14	3.5
175	4.4	13	13	11	3.0
176	3.9	3	6	0	1.5
184	3.7	8	10	11	3.0
186	4.1	11	12	9	3.0
187	4.0	14	12	15	4.0
188	3.7	13	9	11	3.0
191	4.2	14	6	9	3.0

Means: 3.97 11.45 8.34 9.62 3.11

TABLE XXV

STANFORD WORD MEANING DISTRIBUTION OF CLOZE SCORES N = 191

2.0 - 2.4 N = 7						3.0 - 3.4 N = 60					
Subj.	Gr.L.	2.0	2.5	3.0	Grade Equiv.	Subj.	Gr.L.	2.0	2.5	3.0	Grade Equiv.
46	2.3	11	3	4	2.0	1	3.3	11	11	9	3.0
48	2.0	8	7	7	3.0	4	3.2	13	8	7	3.0
85	2.0	2	1	0	1.5	7	3.2	9	11	7	3.0
138	2.3	11	5	3	2.0	17	3.3	8	7	7	3.0
153	2.3	8	6	1	2.0	22	3.0	10	6	7	3.0
181	2.0	4	6	2	1.5	23	3.3	8	9	10	3.0
182	2.1	2	1	0	1.5	27	3.0	10	4	5	2.0
						30	3.1	9	5	9	3.0
Means:	2.15	5.75	4.14	2.42	1.92	33	3.3	12	12	14	3.5
						41	3.3	8	8	3	2.5
						44	3.0	5	2	2	1.5
						47	3.2	16	9	9	3.0
						50	3.1	6	7	4	2.5
						52	3.0	15	9	10	3.0
						53	3.3	8	8	12	3.5
						56	3.0	7	11	9	3.0
						68	3.1	8	13	7	3.0
						69	3.2	11	11	15	3.5
						72	3.0	12	8	9	3.0
						74	3.3	7	3	8	3.0
						75	3.0	12	4	11	3.0
						80	3.3	12	7	9	3.0
						82	3.2	9	6	7	3.0
						83	3.0	13	9	6	2.5
						86	3.3	12	9	12	3.5
						89	3.3	15	11	13	3.5
						90	3.3	9	9	8	3.0
						102	3.0	14	5	7	3.0
						106	3.3	12	12	9	3.0
						110	3.0	5	8	11	3.0
						111	3.3	9	5	0	2.0
						112	3.1	7	2	0	2.0
						113	3.2	12	10	9	3.0
						117	3.0	13	6	10	3.0
						118	3.0	4	1	3	1.5
						123	3.2	13	7	8	3.0
						125	3.1	10	8	7	3.0
						126	3.3	14	11	10	3.0
						128	3.3	4	7	6	2.5
						130	3.0	16	8	5	2.5
						139	3.2	11	9	8	3.0
						141	3.3	8	5	9	3.0
						142	3.2	10	6	9	3.0

3.0 - 3.4 Continued					
Stan.	Cloze	Raw	Score	Grade	
Subj.	Gr.L.	2.0	2.5	3.0	Equiv.
143	3.2	9	1	7	3.0
145	3.3	5	9	9	3.0
146	3.2	11	10	10	3.0
147	3.1	11	9	12	3.5
149	3.3	12	9	12	3.5
155	3.0	12	8	11	3.0
156	3.0	11	7	8	3.0
158	3.0	7	5	6	2.0
161	3.3	8	8	7	3.0
165	3.0	9	4	6	2.0
167	3.0	7	2	0	2.0
168	3.3	10	11	10	3.0
170	3.3	10	3	8	3.0
177	3.3	9	4	6	2.0
178	3.2	10	5	7	3.0
179	3.1	3	3	1	1.5
190	3.3	11	5	13	3.5
Means: 3.09 9.86 7.18 7.88 2.85					

3.5+ N = 98					
Stan.	Cloze	Raw	Score	Grade	
Subj.	Gr.L.	2.0	2.5	3.0	Equiv.
2	3.5	13	4	8	3.0
3	3.7	12	9	0	2.5
5	3.7	12	9	0	2.5
6	4.2	14	11	8	3.0
8	3.7	11	15	13	3.5
9	3.8	13	12	12	3.5
10	3.6	14	13	8	3.0
11	3.5	9	4	2	2.0
12	3.7	16	12	12	3.5
13	4.2	13	13	16	3.5
15	3.8	14	11	11	3.0
19	3.6	11	5	3	2.0
20	3.8	8	8	11	3.0
21	4.2	14	9	10	3.0
24	3.6	12	8	4	2.5
25	4.0	4	12	14	3.5
26	4.7	16	11	15	4.0
28	3.5	8	4	3	2.0
29	3.6	10	2	0	2.0
31	4.0	9	12	11	3.0
34	3.7	3	4	5	1.5
35	4.0	13	11	10	3.0
36	3.6	12	11	11	3.0
37	3.5	8	9	7	3.0

3.5+ Continued					
Stan.	Cloze	Raw	Score	Grade	
Subj.	Gr.L.	2.0	2.5	3.0	Equiv.
39	4.0	11	10	12	3.5
40	4.0	10	12	11	3.0
42	3.5	13	8	8	3.0
43	3.6	14	8	11	3.0
49	3.6	10	12	12	3.5
51	3.8	9	7	6	2.5
55	3.6	10	9	9	3.0
58	3.6	12	12	14	3.5
59	3.6	9	3	8	3.0
60	4.0	13	13	13	3.5
61	4.2	7	6	11	3.0
62	3.7	9	8	8	3.0
63	3.6	8	10	11	3.0
64	4.2	7	5	7	3.0
65	3.5	3	2	10	3.0
66	3.6	15	10	11	3.0
67	3.7	8	7	11	3.0
70	4.2	7	5	7	3.0
71	4.2	14	14	10	3.0
76	4.7	10	11	11	3.0
79	3.8	13	10	10	3.0
81	4.0	12	6	8	3.0
84	3.6	11	6	7	3.0
87	3.5	5	7	2	2.5
88	4.4	11	9	8	3.0
91	3.7	15	10	12	3.5
92	4.7	8	5	9	3.0
94	3.5	1	0	3	1.5
96	3.7	15	11	14	3.5
97	3.5	8	14	11	3.0
98	3.6	11	8	14	3.5
99	3.7	9	2	4	2.0
100	3.8	13	10	11	3.0
103	4.2	10	7	11	3.0
104	3.5	12	7	11	3.0
107	3.8	10	8	3	2.5
108	3.5	12	11	10	3.0
115	4.2	13	10	11	3.0
116	3.5	15	9	9	3.0
120	3.5	10	5	9	3.0
122	3.7	7	3	5	2.0
124	3.7	9	10	12	3.5
127	3.5	12	12	13	3.5
129	3.5	13	6	10	3.0
131	3.8	10	12	9	3.0
133	3.7	14	7	4	2.5
134	4.4	16	11	8	3.0

Subj.	3.5+	Continued			Grade Equiv.
	Stan. Gr.L.	Cloze 2.0	Raw 2.5	Score 3.0	
135	4.0	6	5	10	3.0
136	4.2	9	0	0	2.0
137	4.0	13	15	15	3.5
140	4.2	12	11	9	3.0
144	4.4	14	16	14	3.5
151	3.5	14	5	11	3.0
152	3.8	14	9	13	3.5
154	3.7	10	10	9	3.0
157	4.4	9	9	10	3.0
159	4.4	9	10	10	3.0
160	3.5	14	12	14	3.5
162	3.5	4	7	7	3.0
163	3.6	6	2	6	1.5
166	3.5	8	6	5	2.0
169	3.6	11	9	8	3.0
171	3.6	10	10	7	3.0
172	3.8	15	13	12	3.5
173	3.7	11	11	9	3.0
174	4.4	14	16	14	3.5
175	4.7	13	13	11	3.0
176	4.0	3	6	0	1.5
184	3.6	8	10	11	3.0
185	3.5	11	12	12	3.5
187	4.2	14	15	15	3.5
188	4.0	13	9	11	3.0
189	3.5	10	11	11	3.0
191	4.0	14	6	9	3.0
Means:	3.97	10.87	8.98	9.45	3.00

VITA ⁷

Freda M. Sauer

Candidate for the Degree of

Doctor of Education

Thesis: THE DETERMINATION OF READING INSTRUCTIONAL LEVEL OF DISABLED
FOURTH GRADE READERS UTILIZING CLOZE TESTING PROCEDURE.

Major Field: Elementary Education with Emphasis in Reading

Biographical:

Personal Data: Born in Henryetta, Oklahoma, July 22, 1922, the
daughter of Dewey and Hanna Been.

Education: Received the Bachelor of Arts degree in Public School
Music from Central State College, Edmond, Oklahoma, in May,
1943; completed requirements for the Elementary Certificate
from the same institution in 1956; received the Master of
Arts in Teaching degree from Oklahoma City University in
Elementary Education with emphasis in the Social Studies in
1964; and completed the requirements for the Doctor of
Education degree at Oklahoma State University in August, 1969.

Professional Experience: Employed as fifth grade classroom
teacher for six years at Putnam City Public Schools, Okla-
homa City, Oklahoma, beginning in 1956; the last two years
taught the academically talented fifth grade children;
employed by Oklahoma City Public Schools in 1962 as sixth
grade teacher in high socio-economic area; transferred to
experimental school in staff desegregation in 1964 and
taught ungraded primary Negro children for two years;
employed as graduate assistant at Oklahoma State University,
summer, 1965, in the Reading Center and was again employed
as a graduate assistant at the same institution from 1966
until May, 1967; Reading Consultant in Kingfisher County,
Oklahoma, 1967; employed by Western State College, Gunnison,
Colorado, as visiting professor the summer 1967; employed
as Dean of Women at Southwestern State College, Weatherford,
Oklahoma from August, 1967, until the present time.

Professional Organizations: National Education Association, Oklahoma Education Association, Delta Kappa Gamma, Kappa Kappa Iota, International Reading Association.

Professional Services: Classroom Teacher President, Putnam City Schools, Oklahoma City, Oklahoma, 1961-62; NEA Resolutions Committee, 1962-63; Oklahoma Teacher Education and Professional Standards Commission, 1960-68; Consultant for Living Textbook Program, 1963-64; Staff Desegregation Activities - N.E.A. Professional Rights and Responsibilities Commission, Panel Guest, Washington, D.C. and Fort. Worth.

Research: Oklahoma Consortium Research Grant, 1969.

The Effects on Learning Rate and Behaviors of Raccoons When Deprived of Use of Thumb and when, After the Period of Deprivation, the Use of the Thumb is Restored

Publications: The Instructor "Floppy Ears Fluffo, Inventor."
(Child's story)

Oklahoma Teacher Report of Regional C.T.A Conference