

FIGURATIVE LANGUAGE AS A READABILITY VARIABLE
IN THE STUDY OF THE SHORT STORY

By

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CHAPTER I

INTRODUCTION

Educators and reading experts have long been concerned with the readability of printed materials used in schools. According to Klare (1963), evidence of this concern appeared about 1840 when ease of understanding was considered, at least in relation to vocabulary, in the McGuffey Readers. Ultimately, of course, attempts were made to develop instruments to measure readability. The concept underlying such measurement is the appropriate matching of reader and printed material, and this concept assumes both that readers differ in their ability to read and that printed material varies in readability.

Educators, as well as authors and editors or publishers, have attempted to find means of effecting the most adequate matching of readers and materials because the job of persons in the field of education and publication is so to control the factors of difficulty that books or materials written, published, and selected for use at a specific grade level can be read by most of the students in the class for which they were selected.

The problem of readability extends, of course, beyond the classroom as materials of suitable readability are as necessary for disabled students in the tutorial situation as for the so-called "average" student. Furthermore, research indicates that within every classroom there are usually to be found at least three to five levels of

reading ability. The concept of "most of the students within a classroom" is, therefore, open to varying interpretations. However, the special problems of readability encountered among students in sub-groups or in tutorial situations is not a concern of this paper. In the first place, authors and publishers of materials for disabled readers have longer been cognizant of the need for books at various levels and of the need for materials of a less complex nature (especially with regard to concepts within the content) than have been editors and publishers of anthologies to be used with junior high school and senior high school students. This study, then, is primarily concerned with elements of fiction which may prove difficult for the average high school student to read and comprehend.

Because the earliest procedure attempting suitable matching of reader and printed matter was based almost solely upon subjective judgment by teacher or librarian and because this judgment was frequently thought to be responsible for giving students reading material which was too difficult for them to read, the search for more objective measures was begun.

Chall (1958) identifies three major goals for objective measures of reading difficulty: 1) the discovery of those factors which validly distinguish simpler from more difficult materials; 2) a reliable means of measuring those factors; and 3) an expression of a combination of factors in terms of the reading ability essential to comprehension. The term "readability," however, has no one, clear definition. It embraces, instead, the problems inherent in establishing legibility, the aspect of content and its effect upon interest, and, of course, the ease of understanding. These three aspects of readability are

inter-related, although studies have been made with specific concentration upon one or other element.

Background of the Study

Although readability formulas have long been established with a fair amount of validity, most such formulas have been validated on and established for the areas of prose not included in what the English scholar would term imaginative literature. Klare (1963) admits that formulas do not touch on organization or imagery in writing and that their consideration of style omits many elements or aspects with which the literary critic is familiar.

This fact gives rise to the question of the reliability of applying existing measures of readability to novels, to short stories, or to other literary genres found in anthologies used in literature classes at the secondary level. It is widely accepted that there is a great degree of individual differences among students at all levels. Attempts have been made to circumvent these differences and the difficulties they present within a classroom situation by ability grouping, introduction of and experimentation with the non-graded secondary school, modular programming, or the more common "tracking" system. However, to date none of these attempts to group students has dealt successfully with the specific problem of reading difficulty as it is understood by the reading specialist; and it is felt that materials presented in literary anthologies are selected according to measures which cannot adequately predict reading success for any but the above-average student.

Furthermore, measures of readability of other prose material appear to fail to provide sound judgment for literary genres because prose materials found within the bounds of these genres contain qualities not found in social studies texts, histories, mathematics or science materials. To date, readability formulas developed primarily on the latter do not take into consideration the elements of which Klare (1963) spoke. These elements include colloquialisms, multiple or uncommon meanings of words, imagery, symbolism, and other peculiarly literary qualities which add to and further complicate the reading and understanding processes of high school students. Reiss (1967) would attribute these difficulties to the connotative meanings of words and of groups of words. He writes, in part:

In this language it is not enough to use a dictionary to arrive at a precise meaning for each term, because the terms exist to suggest a wealth of possible meanings. To attempt to find precise meanings for the terms of connotation is to miss the point and deny the value of connotative writing. It is a language that tries to communicate by using verbal principles quite different from those most people are accustomed to using in their daily lives. . . . The essential meaning and the apparent meaning are not necessarily the same; and the essential meaning of the sentences of connotation lies not in the particular words of the sentence but in the implications of those words and of their combinations. (22)

Two works have dealt with the readability of English anthologies. Doyle (1961) attempted to select and to evaluate the most suitable readability formula as a tool for appraising texts to be used in freshman English courses at the college level. Crane (1963) attempted to replace the Dale-Chall list of 3,000 words with a new readability variable or set of variables. His new variables included words of 3+ syllables, abstract verb counts, number of "of" phrases plus modifying abstract words. None of his new variables dealt with figurative language as that term is conceived by English scholars.

Several attempts have been made to measure student responses to reading. Rogers (1964) discovered that certain characteristics in reading the short story differentiated the high level - low level readers. Her primary conclusion was that there was a significant difference between the low and the high level readers in their grasp of the literal meaning of the story as well as in their grasp of implied meanings. It would seem that the fact that the more adept readers were better able to understand symbols, to understand similes and metaphors, and were able to sense the author's mood and viewpoint would suggest the need for a formula which would take into consideration these variables before the low level reader is presented with materials high in symbolic content.

Dunlap (1954) in her review and comparisons of readability formulas concluded that unusual expressions, unfamiliar subjects, disjointed thought sequences, and over-use of punctuation are elements contributing to difficulty of comprehension. She also recognized that such items occurring in one of her samples from Davy Crockett by Constance Rourke as the use of the word "painter" to mean "panther" and the style of expression such as referring to the dogs as "giving music" or "sang as a bell" further complicated the reading act. Her conclusion, however, was to suggest an increased application of the Dale-Chall and the Flesch formulas.

Aukerman (1965) designated in his assessment of the readability of texts three factors which measure literature: 1) mechanical complexity (sentence length and degree of complexity within sentences); 2) verbal complexity (incidence of verbals and incidence of word difficulty); and 3) incidence of abstraction (by means of counts of abstract nouns).

Although these studies point the way, no study has attempted to measure the difficulty of literary selections using the variable of figurative language. Dale (1968) probably comes the closest by attempting to develop a new vocabulary list of some 34,000 words to which he has assigned grade levels of difficulty according to the multiple meanings each word possesses.

In view of the fact that teachers of English have long been aware of the difficulty inherent in figurative language, it is surprising that reading specialists and researchers into readability have not attempted to explore this variable and perhaps add it as a factor to a formula. Gill (1953) discusses 'depth' reading after an inquiry of her high school English students revealed that the majority of them were interpreting figurative language literally. She indicated that almost every figure presented difficulty at a new angle. Her article discusses these difficulties in relation to such stories, widely used in literature anthologies today, as Benet's "Devil and Daniel Webster," Steinbeck's "Flight," and Thurber's "Secret Life of Walter Mitty." In a follow-up article, Gill (1954) reiterates the difficulty of the language of imaginative literature for high school students and attempts to group figures of speech into four categories.

Finally, Cooper (1964) suggests that the metaphor should

. . . be taught as an integral aspect of language, the chief means by which words are given new meanings, and not merely as an ornament of poetry. Even though a metaphor is stated simply, it poses serious comprehension problems for the unsophisticated reader who may lack both the background and the insight into language to reconstruct the experience which metaphor demands of the reader. (89)

Statement of the Problem

It would seem, then, that some measure must be found to determine more adequately and reliably the difficulty of materials presented to students in courses in English. The purpose of this study is to determine an element of literature which has not been considered in the development of existing readability formulas, to determine if this factor provides substantial reading difficulty resulting in loss of comprehension for some students, and to attempt to determine the direction research might take in the development of a more reliable formula for determining readability of imaginative genres. That there is need can scarcely be denied; yearly high school students fail to achieve in English classes not because of lack of intelligence but because they are unable to comprehend literature presented to them or because teachers are unaware of the specific reading difficulties inherent in the materials used in English classes.

Definition of Terms

Readability has been variously defined. For the purposes of this study, it shall be defined as the ease with which an individual understands or comprehends the printed page.

A readability formula, according to Klare (1963) is a method estimating the probable success a reader will have in reading and understanding a piece of writing. In the sense that a formula provides an estimate of difficulty for the writing without requiring the reader to read it and undergo tests on it, it is predictive.

The Dale-Chall Readability Formula (1948) covers the range of difficulty for grades 3-12 and is based on two counts: average sentence length

and percentage of unfamiliar words or those words outside the Dale list of 3,000. Certain reading difficulties are not measured in the formula; therefore, in computing the readability level of material, statistical allowance is made to cover these unknown variables.

Figurative language, according to Abrams (1961)

. . . is language which departs from what is taken to be the standard construction, order, and significance of words in order to achieve special meaning or effect. Language which accords with the standard form is called literal; various departures from this standard are called figures of speech: (36)

Abrams divides all figures of speech into two categories: tropes, meaning 'turns' in which words are used with a decided change or extension in their literal meaning, and figures of thought in which the departure from the standard is primarily in the arrangement or the rhetorical function of the words without radical change in their literal meaning. Because some figures of speech are more applicable to poetry than to prose and occur rarely, if ever, in the latter, focus in this study will be upon the following figures of speech and will accept the definitions of Abrams and of Taaffe (1967):

1. Apostrophe is that figure of speech in which someone or some thing not present is directly addressed.
2. Rhetorical question is that figure of speech in which a question, asked by the speaker, clearly calls for no direct answer.
3. Simile is a figure of speech in which two unlike objects are compared by the use of the words "like" or "as."
4. Metaphor is a figure of speech in which one thing is called that which it is not.
5. Synechdoche is the substitution of a part for a whole, such as reference to ten "hands" instead of to ten "workmen."
6. Metonymy is a figure of speech in which the name of one object is applied to another: "crown" for "king," for example.
7. Personification is that figure of speech by which human attributes are applied to non-human elements.
8. Hyperbole is a figure of speech in which exaggeration, usually gross, is used for the sake of effect, often for the effect of humor.

9. Oxymoron is a figure of speech containing two terms that in ordinary usage are contraries, such as "pleasing pain."
10. Synesthesia is that figure of speech which associates one kind of sensory response with another: a "loud color" or "the sunlight's chorale."
11. Onomatopoeia is the use of a word the sound of which conveys the meaning of the word.

It must be mentioned that although there are other figures of speech, as authorities in the literary field would be quick to point out, this study is concerned with those which are felt to be most frequently found not only in prose, but especially in the selections chosen for the study.

Although incidents of other figures of speech may occur in the discussion of the selected short stories, they will be disregarded.

The short story, as the term is used in this paper, will be defined by Thrall and Hibbard (1936) who derived their definition essentially from that of Edgar Allen Poe. The short story is an imaginative narrative consisting of a series of incidents drawn from one situation and creating upon the reader a singleness of effect.

The Cloze procedure may be defined as a method of intercepting a message from a writer, mutilating its language patterns by deleting parts, and so administering it to readers that their attempts to make the patterns whole again potentially yield a considerable number of Cloze units. A Cloze unit may be defined as any single occurrence of a successful attempt to reproduce accurately a part deleted from a "message" (any language product) by deciding from the context that remains what the missing part should be. Taylor (1953).

Hypotheses

This study has been designed to test the following hypotheses:

- Hypothesis I: There is no significant difference in the comprehension scores of students as revealed by the Cloze procedure when the level of difficulty of material is held constant by the Dale-Chall readability formula but the quantity of figures of speech varies.
- Hypothesis II: There is no significant difference in comprehension of students at the 12th grade level when the teaching of figures of speech is the specific reading skill emphasized in the teaching of selected short stories and when the teaching of these figures is not emphasized.
- Hypothesis III: If the above hypotheses are rejected, the variable, figurative language, is a variable which may provide more validity for a readability formula for the short story than formulas which fail to include this variable.

Basic Assumptions

The following assumptions have been made:

- 1) The Intelligence Quotient of students in the sample used for the study can be measured with an acceptable degree of validity;
- 2) The reading achievement level of students within the sample can be measured in terms of grade level for vocabulary, comprehension, and total scores with an acceptable degree of validity;

3) The Cloze technique provides a reliable measure of reading comprehension;

4) The Dale-Chall Readability Formula is one of the most valid instruments, to date, for measuring readability of printed materials at the various grade levels;

5) The figurative language (figures of speech) within a given short story and/or passage of a short story can be counted.

6) Despite grade-level assignment of the Dale-Chall Readability to a short story, readability increases as figures of speech are eliminated.

Delimitations of Study

This study hopes to analyze quantitatively figurative language found in ten selected short stories commonly used in texts approved for secondary schools and to show a relation of this language to comprehension.

Two kinds of pre-tests will be used in this study. One pre-test, using the Cloze procedure, will be administered to all students within the sample to attempt to determine comprehension of passages chosen from the selected short stories. One pre-test, in which 500 word passages from stories to be taught have been extracted, will be administered; students will be asked to underscore all figures of speech which they recognize within the passages and to identify them.

Two kinds of post-tests (Cloze and identification) will be administered to students to attempt to determine their ability to recognize and to comprehend passages after figurative language has been taught as an

essential element of the story and when figurative language has not been taught.

Although it is hoped that this study will suggest the rationale for a more highly refined readability formula for literature, it is without the scope of the study to develop or to standardize such an instrument.

Organization of the Study

Chapter I has attempted to present the background and the need for this study, and the statement of the problem. Terms to be used throughout have been defined, and testable hypotheses have been formulated. Basic assumptions and delimitations as well as the scope of the study have been delineated.

Chapter II will be divided into two sections. It will present a review of the literature regarding the scope of existing readability formulas as they include or fail to include the variable of figurative language as well as their relation to what has been defined here as the short story. It will also attempt to review the literature to date on the function and validity of the Cloze procedure as a check of reading comprehension.

Chapter III, Methodology and Design, will explain the techniques used in selecting the sample for the study and the development of the design for the experimentation. Explanation of standardized tests used for grouping and construction of instruments to test the hypotheses will be presented. Because of the nature of the study, some discussion of teaching method employed by the investigator will be necessary.

Chapter IV will explain the collection, analysis, and results of the data procured in this experimental design. Data will include scores on standardized tests--The Lorge-Thorndike Intelligence Test, Level 5 and the Nelson Denny Reading Test, Form B, used mainly for grouping purposes. Analysis of co-variance will be used to find the level of significance of achievement differences between groups and group means from pre-test and post-test scores and will serve as the technique to accept or reject the null hypotheses stated in Chapter I.

In Chapter V, summary and conclusions will be presented as revealed by the analysis of statistics. Implications will be drawn from the data collected, and suggestions will be offered for further exploration of similar or related experimentation.

CHAPTER II

REVIEW OF LITERATURE

Introduction

The review of the literature has been divided into two major categories: 1) research related to the area of readability formulas and 2) research related to the Cloze technique.

Readability Formulas

The concept underlying a formula for readability assumes both that readers differ in their abilities to read and that printed materials vary in their degree of difficulty. The attempt to match the reading level of the reader with the comparable difficulty level of a book or other sample of printed material requires an accurate prediction that the reading matter is written at the reading level of the individual who will read it.

As instruments for evaluating printed materials, reading formulas came into use after Thorndike developed his list of 10,000 words. The three goals of early researchers were 1) to discover the factors which would validly distinguish easy from difficult materials; 2) to determine a reliable means for measuring these factors; and 3) to develop a formula which would express a combination of these factors in terms of the reading ability necessary for reader comprehension. Basically, three kinds of research were conducted during the early years of readability

design: 1) surveys of experts' and readers' opinions; 2) experimental studies of one factor; and 3) quantitative associational studies.

Most significant for this study, however, is probably the question asked in quantitative associational studies (as in surveys of opinions): What makes the materials easy or difficult to read? In the quantitative associational study, however, the question is put to the material itself instead of to the reader. The answer to the question is sought through analysis of internal factors (usually expressed in quantitative terms) of the material. These factors are then checked by comparison with a criterion. The factors involved most frequently are vocabulary difficulty as determined by comparison with a list of familiar words, sentence length, prepositional phrases, affixes, and other grammatical considerations. According to Lee (1963), the degree of relationships is usually expressed in terms of a coefficient of correlation. The last step, then, is the combining of the most significant internal factors into a formula, usually a regression equation based upon the weighting of the most significant internal elements.

Although there exists some disagreement as to which was the first readability formula to be developed, Klare (1963) cites Chall (1958) and seems to accept the work of Lively and Pressey as being the first quantitative study. This study was reported in 1923. The purpose of the study was to determine the vocabulary "burden" of textbooks in junior high school science classes, and it relied heavily upon Thorndike's list of 10,000 familiar words.

In 1926, the Winnetka, Illinois, schools attempted to determine which books were read and liked in children's reading at certain grade levels. From this study was published the Winnetka Graded Book list

which quickly became a guide for teachers, parents, and librarians in the selection of books suitable for children in grades three through nine. A combination of four factors was found in a subsequent study to have significant relationship to the criterion of 1,000-word samples from 150 books selected from the Winnetka book list. These four factors were the number of different words in a sample of 1,000; the number of prepositions (including duplicates) per 1,000 words; the number of words, including duplicates, in the 1,000 words not occurring in Thorndike's list of 10,000; and the number of simple sentences in 75 sample sentences.

Numerous studies followed. One study reported a method for judging the difficulty of parent-education materials. The criterion consisted of 16 passages of 500 words taken from magazines. A difficulty level was assigned to each passage. In this study, internal factors were not only quantifiable as considered by previous studies, but were also qualitative. Quantitative factors were measures of vocabulary difficulty (six) and measures of composition and sentence structure (eight). Qualitative factors were established as concreteness or abstractness of relationships as distinguished from individual words used; obscurity; and incoherence in expression. It was found that, having used the Thorndike list as the vocabulary factor for the criterion, the easier passages discussed concrete experiences and the more difficult passages discussed abstract relationships.

From the work of Lively and Pressey (1923) through that of Gray and Leary, (1935) the search continued for a larger number of factors to account for difficulty. Such items as selection of different difficult words; number of first, second, and third-person pronouns;

percentage of different words; average sentence length; and the number or prepositional phrases were incorporated into readability formulas.

According to Klare (1963), the trend towards simplification of measurements for readability was begun about 1938. Washburne and Morphette simplified their original formula by reducing the number of factors from four to three (by dropping the count of prepositional phrases) and by changing their count of the total number of words not on Thorndike's list of 10,000 to the number of different uncommon words not in Thorndike's 1,500 commonest. Not only did these changes simplify the formula; they made it easier to apply without substantially altering its accuracy.

Irving Lorge continued the trend towards simplification when he sought a simple empirical formula that could be used to predict the difficulty of children's books in terms of grade scores. Lorge used three factors: number of different difficult words, average sentence length, and the number of prepositional phrases. These factors he chose as the most practical as well as the most adequate predictors of difficulty.

As Klare (1963) was quick to point out, readability formulas are not so easy nor clear-cut to recognize; for one thing different reviewers report different numbers as well as terms other than the one term "formula." Klare, himself, uses the term "method"; Dunlap (1954) substituted the words "measure" or "technique"; and Chall (1958) used "quantitative associational study." Klare goes on to point out that anyone who wishes to use a formula must choose from about 31 existing formulas or their variations. Since a review of the most comprehensive studies of readability formulas reveals that none goes into a study of

figures of speech as a measurable element, it seems superfluous to outline in detail each of the commonly used formulas. Klare indicates that, for one thing, they measure only one aspect of writing--style-- and that those which do so measure only one aspect of style--difficulty. Such aspects of style as its ability to create mood or its effectiveness in swaying opinion are not considered. Formulas do not seem to be measures of content or imagery in writing.

Items measured in readability formulas seem to fall under the following general classifications:

- 1) number of words not appearing on a list of familiar words; such lists are the Thorndike list, the Dolch list, the Dale list, or other comparable list.
- 2) number of different words in the sample;
- 3) total number of prepositions;
- 4) percentage of difficult words;
- 5) percentage of words beginning with certain letters such as "w," "h," "b," "i," "e," etc.;
- 6) ratio of Anglo-Saxon words to Greek and Roman words;
- 7) vocabulary interest or an estimate of sensory words;
- 8) percentage of polysyllabic words;
- 9) number of technical words;
- 10) number of letters per word;
- 11) number of words per sentence;
- 12) number of various types of nouns, "definite" words, number of finite verbs, number of nouns of abstraction;
- 13) sum of references of a realistic, specific, or concrete nature;
- 14) average sentence length;

- 15) number of words per modifier;
- 16) number of personal words and personal sentences; (human interest words);
- 17) number of personal references;
- 18) number of prepositional phrases;
- 19) grade placement.

It should be readily apparent that very few of these items are related to figurative language directly or to quantitative associational study of this factor.

Studies which include some measure of abstraction probably come closest to including some measure of the difficulty of figurative language. Rudolph Flesch (1943) based his assumptions that difficult material is characterized by abstract conceptions upon a study which developed an "idea analysis technique." Flesch studied the literature of linguistics and concluded that affixed morphemes (prefixes, suffixes, and inflectional endings) were the carriers of abstractness. He further concluded that passages containing larger proportions of abstract words would be more difficult than passages carrying fewer abstract words. Therefore, his early formula included the variables of average sentence length, number of affixed morphemes, and the number of personal references. This formula he revised later; and in the revision, the affix count became a syllable count, and the personal reference count became the personal words factor.

In his article, "Measuring the Level of Abstraction," and in the formulation of his later instrument, Flesch (1951) indicated that clear communication ascends and descends the various levels of abstraction; but his study did not deal specifically with figurative language and

its relationship to these levels of abstraction. In her evaluation of this formula, Chall (1958) pointed out that Flesch's formula did discriminate difficulty at the higher grade levels.

One of the most significant formulas, the Dale-Chall formula (1948) arose from the need to find a simple formula that could be used in estimating the difficulty of pamphlets published by the National Tuberculosis Association for adult readers with low ability. The formula used, at first, the original Flesch formula; but as its application was judged too time consuming, Dale and Chall returned to a formula count of the relative number of words outside the 3,000 on the Dale list of known words, and to a count of sentence length.

Studies to perfect readability formulas continued, although the dilemma of the English teacher as delineated by Gill (1953) was still unresolved. Not only was she concerned with students' interpretation of figures of speech as literal expressions, but she also had pointed out other areas that were still unexplored by the beginning of the 1960's. One of these was the technique, as she put it, that writers use of "fragmenting" characterization through the story; another was their method of "flashback" in place of sequencing, chronologically, incidents in stories. Gill (1954) points out, further, that students fail to catch irony, and that other meanings determined by characterization of figurative language, such as implication and/or multiple meanings of words, affect comprehensibility. Gill emphasizes two concepts which are accepted in this study: 1) the spoken figurative expression is easily understood because the speaker conveys nuances of meaning by intonation, emphasis, and effective pause; 2) figurative language carries extra loading of difficulties for comprehension by virtue of contrived

types such as contrast, omissions, and cliches or references which are out of focus with experience or language of today's students.

Although other studies fail to consider the specifics enumerated by Gill, research into readability continued. Some researchers suggested that reading time alone might adequately serve as a criterion. Coleman (1962) undertook a study to evaluate the effect upon readability of sentence length, as this was a factor widely accepted. Results showed that perhaps the sentence is the wrong unit to shorten and that it might be more effective for reading ease to shorten clause length.

Bormuth (1964) studied word depth meanings as reported in Victor Yngve's computational study. According to Bormuth, for a test of word depth meaning, a number is assigned to each word in the sentence of the sample. This number represents the number of grammatical facts about that word in relation to the total sentence which a computer would need to store in its memory at the time it printed out that word. The number, then, is called the word's "depth." The criterion for deciding if the computer must store a fact about the sentence in which the word appears is whether or not the computer would need to use that fact in order to complete the sentence grammatically.

Bormuth's findings were that while mean word depth and the Dale-Chall readability factors were closely related under some circumstances, mean word depth measured additional factors; these additional factors were seen as more relevant to the prediction of comprehension difficulty of the passages. Further, the study suggested that concept difficulty is no more than the tendency for authors to use different sentence structures when they write about different matters. The mean word depth measure also appears a powerful predictor of comprehension

difficulties of passages that differ in subject matter content but are nearly identical in sentence length and the proportion of difficult words. Finally, a high correlation was observed between mean word depth and comprehension difficulty when the passages differed primarily in subject matter content; this finding suggests that mean word depth may be effective as a measure of concept difficulty.

Another study by Bormuth (1964) attempted to deal with one aspect of the question: Why is some language easy to comprehend and some language difficult to comprehend? The objectives of the study were, essentially, three: 1) to determine the forms and strengths of the relationships between comprehension difficulty of language and the measurable dimensions (linguistic variables) of that language; 2) to try out new linguistic variables to see if they were useful predictors of comprehension difficulty, and 3) to discover if useful predictions can be made of the readabilities of smaller language units. One conclusion appeared to be that instructional materials which, on the whole, may be of suitable difficulty often contain words or clauses which appear to be extraordinarily difficult; however, at present there is no way to ascertain if these words or clauses are as difficult as they seem.

An attempt was made by Martin and Roberts (1966) to analyze phrase-structure of the sentence and to count the grammatical commitments incurred by each word of the sentence and, thus, to formulate a rationale for indexing the complexity of sentences.

Rudell (1967) reported an experiment used to test two hypotheses: 1) the degree of comprehension with which written passages are read is a function of the similarity of the written patterns of language structure to oral patterns of language structure used by children; and 2) the

comprehension scores on reading passages that utilize high frequency patterns of oral language structure will be significantly greater than the comprehension scores on reading passages that utilize low frequency patterns of oral language structure. As might be expected, both hypotheses showed positive correlation.

Kingston (1967) showed a correlation between maturation of the reader and the difficulty of the language. He suggested that at the intermediate and upper elementary grade levels

. . . somewhat different response modes and 'sign' and language manipulation seem to be more important. In addition to the literal language needed during the primary grades, ability to handle figurative language and more complex structures seems to be necessary for reading success. The reasons why some children have less difficulty in acquiring these abilities is not so simple as many teachers think. It also should be noted that recently there has been a shift in emphasis from the biological concept of maturation to an emphasis on the effects that environment, particularly a stimulating and nurturing one, have on the course of development.

Despite such studies, it is still true that none to date effectively measures the complexity of figurative language and, hence, the readability of the literary short story. It would appear, then, that some such measure should be specifically investigated.

Cloze Technique

The Cloze technique is receiving wide study today as a measure of comprehension and readability but is not to be confused with standard readability formulas. The theory behind the Cloze technique is that it is a means of measuring the degree of correspondence between the language of a message and the language system of a reader. Assuming, as it does, that readability and comprehensibility are essentially synonymous terms, the Cloze procedure begins by choosing sample passages of equal

length for comparison, and then it mutilates each passage by deleting randomly the same number of words from each. Subjects are asked to determine the missing word and to supply that word in the blank space provided. The units the procedure counts are the successful acts of reproduction. This procedure is capable of investigating, according to Greene (1965), either passage difficulty or reader competence. To examine passage difficulty, the investigator holds the reader population constant and varies the passages; to examine the reader's competence, the passages are held constant.

Wilson Taylor (1957) reported on the Cloze procedure following an experiment aimed at testing the validity of Cloze indices on readability. According to Taylor, the Cloze technique was introduced in 1953 along with experimental evidence to support the conclusion that it is an effective and reliable method of quantitatively pre-testing and contrasting the relative readabilities--for defined populations or readers--of various samples of English prose.

The Cloze unit derived its name from the term "closure." In Gestalt psychology, this term applies to the human tendency to complete a familiar but not quite finished pattern--to "see" a broken circle as a whole, for example, by mentally closing gaps. The same principle may be applied to language.

A Cloze unit may be defined as any single occurrence of a successful attempt to reproduce accurately a part deleted from a "message" (any language product) by deciding, from the context that remains, what the missing part should be. Taylor (1953) defined the 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" (readers or listeners) that their attempts to make the patterns whole again potentially yield a considerable number of Cloze units. He concluded that the Cloze procedure has a high degree of reliability with reference to language patterns; but he made no attempt to relate it to figurative language. He also found a significant correlation between Cloze test difficulties of a set of passages and the readabilities of the passages as the Dale-Chall formula and the Flesch formula predicted. Taylor (1953) also observed that the Cloze test measured elements of style which affect passage difficulty but to which readability formulas are insensitive.

Taylor's investigation involved an experiment on mutilated samples of a technical article with Air Force trainees. The findings appeared consistent in support of the hypothesis that, for the reader concerned, Cloze readability scores are valid indices of the comprehensibility of English prose.

Weaver and Kingston (1963), suggesting that as a measure of aptitude the Cloze procedure has only ease of construction to recommend it, suggest that because the exact relationship of the word deleted to the kind of material deleted is not known, the ease might be illusory. They reported two types of Cloze deletions: structural, in which every nth word is deleted; and lexical, in which every nth noun or main verb, and occasionally adjective, is deleted. They found that structural deletions correlate significantly more highly with vocabulary and reading comprehension sections of the Diagnostic Reading Test than do lexical deletions, but that lexical deletions correlate significantly more highly with the story comprehension section of the same test than do structural deletions. The central implication resulting from their

study suggests that Cloze tests of varied kinds are more related to each other than to the other two factors isolated by their analysis: verbal comprehension and rote memory - flexible retrieval.

Bormuth (1963) tested three hypotheses: 1) Scores on Cloze tests correlate with scores on multiple-choice tests written over the same passages and also with scores on tests each of which contains a different kind of comprehension item; 2) There is a correlation between the two sets of difficulty ranks obtained from scores on multiple-choice and Cloze tests that are made over the same set of passages; 3) There is a correlation between the Cloze test difficulty rankings of a set of passages when the tests are given to groups which differ in Dale-Chall grade placement levels and items in Cloze tests are distributed over the full range of difficulties.

For this study, Bormuth constructed a Cloze test by deleting every 5th word in each of a set of nine short passages which had been written so that there were three in each of the subject matter categories of literature, social studies, and science. Multiple-choice (31 items) comprehension tests were also written over each passage. The Cloze tests (at 4.5, 5.5, and 6.5 reading levels as computed by application of the Dale-Chall formula) were administered to three groups of 50 students each from grades four, five, and six. It was concluded from the following specific findings that the Cloze tests used in the study were valid, reliable, and flexible measures of the comprehension difficulties of the passages:

- 1) Cloze tests are valid and uniform measures of reading comprehension ability.
- 2) The Cloze tests were valid and highly reliable predictors of the comprehension difficulties of the passages.
- 3) Cloze tests are appropriate for use with individuals and groups which vary widely in comprehension ability.

Bormuth (1965), reporting on a study by MacGinitie, reiterates that as long as four or more words of continuous text appear on either side of an item deleted, the item's difficulty is unaffected by the deletion or non-deletion of key or other words in the text. Since every-nth-word deletion patterns coincide with no known patterns of language, it is reasonable to assume that the Cloze deletion procedure results in item sampling that is essentially random.

Essentially, this study of Bormuth's was designed to test the reliability of estimated standard errors. He concluded that the sizes of the standard deviation of Cloze test scores are influenced by the difficulties of the test. For his study, standard deviations were plotted against the means; for tests with means below 25%, there is a tendency for the standard deviation to increase with the mean; but for easier tests, no such effect is observed. Cloze tests means, he reports, seldom exceed 65%; and individual scores above 90% are rare. Bormuth found, also, that error is reduced more by adding a given number of items to the test than by adding the same number of subjects.

In order to measure the effects of deleting certain grammatical classes of words, Louthan (1965) selected 24 passages of 500 to 600 words each and then prepared seven Cloze forms. His mutilations were made by deleting every tenth word, having chosen a random number between one and ten for the first word. The word closest to the end of each segment which fitted the desired grammatical class was deleted. Seven types of deletions were made: 1) deletion of the last word in the segment, regardless of class or function; 2) deletion of nouns, both proper and common; 3) deletion of specific verbs; 4) deletion of modifiers, both adjectives and adverbs; 5) deletion of prepositions and

conjunctions, exclusive of coordinating conjunctions; 6) deletion of function words or noun determiners; and 7) deletion of substantive uses of pronouns. Not surprisingly, it was determined that noun deletions, specific verb deletions, and modifier deletions resulted in the greatest loss of comprehension and are, therefore, assumed to be the basic meaning carriers of written material. If one word in ten is deleted and all words are of one of these classes, there is a marked loss in comprehension. Louthan further suggested that the Cloze techniques, although limited by the necessity of using the word to measure language, show promise of uncovering more about the process of reading and about the nature of the written language.

Bormuth (1968), who perhaps has done more research into the Cloze procedure than anyone else, offered statistical proof that Cloze readability tests are highly valid and highly reliable measures of the comprehension abilities of students and of the comprehension difficulties of materials.

One of the more significant developments in Cloze technique may have been the study by Greene (1965) who indicated that the "modified" Cloze procedure is a better test in reliability and item performance than the "standard" Cloze procedure. In the former technique, each possible deletion is evaluated by the author for possible effectiveness and deletions are made on rational, not mechanical bases; word restrictions, then, apply only to nouns, verbs, adverbs, and adjectives rather than to randomly deleted every nth word. However, the test time in terms of construction is increased, and there is also an accompanying loss of objectivity in item construction. Louthan's study has pointed

out the marked loss in comprehension when those of basic meaning carriers are the deletions used.

Summary

Despite the continued search for new and improved readability formulas, no one formula has been constructed which is able to measure all aspects of reading difficulty. No attempt, other than some measure of abstraction as delineated by Flesch or investigations into other aspects of difficulty through mean word depth and linguistic studies, has been made to analyze the relationship of figures of speech to passage difficulty.

Although there are numerous formulas for readability being used today, the standard instrument for materials at the upper grade and adult levels remains the Dale-Chall formula. For this reason, and because it is an instrument easy to apply, it has been chosen as the readability instrument to be used with the stories selected for this investigation.

Furthermore, because it is felt that a discrepancy exists between the assessed reading level assigned by the Dale-Chall formula to the stories chosen and the actual comprehensibility of the material, the Cloze procedure has been selected to measure the comprehension of the stories by the students in the sample. Indications are that the Cloze technique has at least as much reliability and validity as a teacher-constructed instrument such as a multiple-choice test. Therefore, it was deemed wise to use the Cloze procedure for analysis of comprehension both before the experiment was begun and after it was completed.

CHAPTER III

METHODOLOGY AND DESIGN

Introduction

Chapters I and II presented the need for the study, a statement of hypotheses to be tested, and a review of literature pertaining both to readability formula strengths and weaknesses and to the Cloze technique. Chapter III presents a description of the population of the study, the instruments used for the collection of data, and the statistical treatment of the data.

Description of Population

Senior students of English at the secondary level who had been exposed for a minimum of three years to standard literature courses but who had not been taught a unit on the short story during the 1968-1969 academic year constituted the population of this study. Permission was sought and granted to select senior students from the total population of seniors attending the C. E. Donart High School, Stillwater, Oklahoma, for the study.

According to grade placement, then, 126 students, both male and female, were selected by a stratified random technique for initial inclusion in the study. These 126 students were representative of two of the divisions accorded the English student population at the high school: Track I or college bound students, and Track II or "average"

students. Tracking, according to the department head, was achieved on a partially subjective basis of evaluation of students' ability as perceived by previous English teachers, and partially on the basis of standardized test scores.

The population was further screened by means of the Lorge-Thorndike Intelligence Test, Nonverbal Form, Level 5, (1957) and the Nelson-Denny Reading Test, Form B, (1960). Students who had at least "average" IQ's as indicated by scores above 85 on the Lorge-Thorndike Intelligence Test, and who had a reading ability as revealed by the Nelson-Denny Test no more than two years (grade equivalent) below grade placement were admitted to the sample.

From the original population, four students (three girls and one boy) were eliminated because no reading test scores were available; six students (four boys and two girls) were eliminated because no intelligence test scores were available. Ten students (six girls and four boys) were eliminated on the basis that total reading scores were below the established criteria; three students (all girls) were eliminated on the basis of low IQ scores. A total of 22 students were eliminated because of failure to be present at the time of administration of either the pre- or post-tests. The final sample, 79 students, was comprised of 40 boys and 39 girls; 38 students (20 girls and 18 boys) made up the control group; 41 students (19 girls and 22 boys) made up the experimental group. In order to avoid possibility of biasing results, no attempt was made to administer tests to students who were absent from school on the days on which tests were initially given.

To avoid disruption of the students' or teachers' schedules as much as possible, no arrangement of classes for greater homogeneity was

attempted despite the fact that the mean IQ score of the experimental, Track II, group was 15 points lower than the lowest mean of any other group. It was further discovered, shortly after the experimental part of the study was begun, that some students in the experimental group had been assigned to the class not on the basis of achievement or aptitude, but on the basis of convenience of scheduling. For this reason, to adjust for increased precision and equated group means, analysis of co-variance was selected as the appropriate statistical design.

Major objectives of the study were to analyze short stories for a simple count of figures of speech in an attempt to show their relation to readability formulas and then to teach these stories to a group of senior students. The purpose was to determine whether or not emphasis upon figurative language with students in the experimental classes would result in significantly better comprehension of material. Ten stories by well known American and British authors, frequently found in secondary school anthologies, were selected to be taught. (See Appendix A.) The count of figures in these stories ranged from very few (less than 20) to many (over 100). (See Table I.) Norms for identifying the figures were established by applying the definitions as outlined in Chapter I and by establishing specifics for selecting the alliterations. In this study, three words beginning with the same consonant sound in a sentence were automatically considered to be alliterative. The "s" sound was the single exception. For an initial "s" sound to be considered alliterative, the words beginning with the "s" sound had to number two or more in consecutive order. This rule was applied, also, in the selection of double or triple consonant sounds as examples of alliteration.

TABLE I
 READABILITY LEVELS AND FIGURES OF SPEECH COUNT
 FOR TEN SELECTED SHORT STORIES

	Cather	Galsworthy	Greene	Gordimer	Hemingway	Steinbeck	Stegner	Welty	Sansom	O'Flaherty
Alliteration	13	0	11	12	0	32	8	3	15	10
Hyperbole	0	0	0	0	0	0	1	0	0	0
Metaphor	28	0	22	26	1	42	25	8	17	12
Metonymy	0	0	0	0	0	1	0	0	0	0
Onomatopoeia	2	0	1	0	0	11	1	0	0	0
Oxymoron	0	0	0	0	0	1	0	0	2	0
Personification	4	3	3	12	0	43	17	0	22	30
Rhet. Question	0	0	0	0	0	0	0	0	2	0
Simile	13	1	6	15	0	14	10	16	15	5
Synechdoche	0	0	0	6	0	0	2	2	2	0
Synesthesia	1	0	3	0	0	1	0	0	0	0
Total Figures	63	4	46	71	1	145	64	29	75	57
Dale-Chall Readability Level	6-7th	7-8th	7-8th	7-8th	4-5th	6-7th	9-10th	7-8th	5-6th	9-10th

A study unit was organized for the purpose of teaching characteristic elements of the story as a literary genre. The regular teacher agreed to follow his usual procedure for teaching such a unit with the control group, but to eliminate as much as possible direct discussion of figures of speech. The investigator was permitted to substitute for the regular teachers of both sections comprising the experimental group and to emphasize figures of speech as a language factor contributing to difficulty of comprehension of the following literary elements: characterization, setting, plot, tone, and theme.

The procedure followed by the investigator for teaching the unit was to assign the stories one, two, or three at a time (depending upon length) to the students to be read as homework. On the following day, the class period was spent in encouraging students to discuss and to exchange ideas orally about the literary elements. At first, attention was called by the investigator to various figures of speech: i.e. examples of personification in O'Flaherty's "The Hawk." In this instance, students were then asked to locate further examples of personification and to suggest ways in which they felt this language made more vivid the character or made more forceful the theme as they perceived it. Students were then asked, on subsequent days, to apply this reading and study technique to other stories assigned (but not previously discussed) without initial prompting by the investigator.

Since it could not be assumed that figurative language had been taught prior to this study, at least two periods were used near the beginning of the experiment to provide students with definitions, explanations, and examples of the figures to be encountered in the course of the unit. It was likewise felt essential to review or to teach the

above-mentioned literary elements. However, little time was spent in class-room lecture; instead, question-answer type class periods were provided to stimulate discussion and individual thinking about material read and the relationship of the author's language to the meanings of the stories.

Both teachers participating in the experiment hold advanced degrees. The investigator has an M.A. in English; the teacher for the control group holds an M.A. in education. Fifteen school days were allotted to the experiment as it was felt that this length of time was all that was available for the teaching of such a unit.

Instruments Used

Although no standardized group reading diagnostic test is felt to provide as accurate a measure of an individual's reading ability or adjusted developmental level as a battery of tests administered individually, standardized group tests are recognized as valuable instruments for the purpose of grouping students. One such instrument with a high degree of reliability and validity is the Nelson-Denny Reading Test, Form B, (1960).

This test consists of three sub-tests: 1) vocabulary test (ten minutes); 2) comprehension test (20 minutes); and 3) reading rate test (one minute, timed). Total time for the test is 30 minutes. One hundred items of the multiple-choice variety and 36 items of the multiple-choice variety comprise the vocabulary and the comprehension tests respectively. Because it was felt that this reading rate sub-test often reflects unrealistic scores and that reading rate has little, if

anything, to do with the hypotheses under investigation, rate scores have been deleted from the data.

The manual for the Nelson-Denny Reading Test indicates that the test will help separate disabled readers from average readers; for this reason it was considered to be a useful instrument for screening the sample of the study. Correlations cluster around the .25 mark with non-verbal types of intelligence tests and with similar tests of reading ability (silent).

The reading rate portion of the test and more complete norms have been added in this revision of the 1939 test. According to Orr (1965) there is little to criticize in the standardization of the test. Reliabilities for vocabulary, rate, and total scores are high (.92 and .93); comprehension reliability is .81. Standard errors of measurement are presented and their use explained in the manual.

Townsend (1965) reported that items in the vocabulary test are chiefly general and somewhat literary in character and pointed out that although percentile norms appear to indicate an adequate spread of scores and suitable reliability figures for grade 11 and above, restricted content may make the test unsatisfactory for use with high school students not college bound. This evaluation was felt not to be a hindrance in securing valid scores from the sample involved because of the population from which it was selected.

The Nelson-Denny Reading Test, Form B, had been administered to all students in the sample and machine scored approximately two months prior to the beginning of this investigation; it was felt, therefore, to be redundant to administer another form of the test, and these scores were used for screening.

Prior to the first of 15 class sessions allowed for the study, the regular English teachers administered, under direction of this investigator, the Lorge-Thorndike Intelligence Test, Nonverbal Form, Level 5, (1957). This test is composed of three sub-tests of multiple-choice construction; two are pictorial and one is numerical. A total of 27 minutes is allowed for the test.

Freeman (1959) reports that mental processes sampled by the test include the following:

- 1) dealing with abstract and general concepts;
- 2) interpretation and use of symbols;
- 3) dealing with relationships among concepts and symbols;
- 4) flexibility in the organization of concepts and symbols;
- 5) utilization of one's experience in new patterns;
- and 6) utilization of "power" rather than speed in working with abstract materials. (479)

All of these processes are felt by the investigator to be relevant to the reading process.

The nonverbal form of the Lorge-Thorndike Intelligence Test was selected because not only does it correlate highly with reading ability, but it also provides a group measurement of IQ not biased by the individual's inability to read the items. Since it was assumed that individual IQ scores might be affected, on the verbal form, by the precise variable (figurative language) under investigation, the nonverbal form seemed appropriate.

The manual for the test reports a stratified sample of several communities of varying socio-economic levels used as basic procedure for securing norms. Freeman (1959) referred to the test as one of the best group tests available both from the standpoint of the psychological constructs upon which it is based, and from the standpoint of statistical standardization. Correlation between the Lorge-Thorndike derived

IQ scores and the Stanford-Binet grade equivalents in reading is .87; correlation with the WISC are also quite high.

Pidgeon (1959) suggests that the test has little if any value for predicting ability to read; however, this was not a purpose of administering the test, and so it was considered to be of little relevance in its selection.

Finally, three 500-word passages were selected by the investigator from three of the stories to be taught. These passages constituted Type I Pre-test. (See Appendix B.) From these passages every 10th word had been deleted according to the standard Cloze procedure. The first word to be deleted was selected by random technique from the numbers 1-20. The 17th word in the passage was the first deletion. Passages for this test were selected on the basis of numbers of figures of speech and ranged in count from 0-22. (See Table II.) Students were instructed to complete the sentences by writing in the word which they believed had been deleted; they were encouraged to attempt to provide a word for every space and to determine the word omitted by reading ahead and attempting to comprehend the meaning of the sentence, then returning to the blank space and writing the word. Scores were obtained by counting correct only exact words; synonyms were discounted as incorrect. Percentages were figured for each Cloze test.

Two 500-word passages were also selected from two other stories to be used in the unit. This constituted Type II Pre-test. (See Appendix C.) Students were asked to identify figures of speech by underscoring and writing in above it the name of each figure. Selections for Type II Pre-test were also chosen on the basis of numbers of figures of speech and ranged from 17 through 27. (See Table III.) Scores for this

TABLE II

FIGURES OF SPEECH: TYPE I PRE-AND POST TESTS (CLOZE)

	Alliteration	Metaphor	Type I Pre-tests			Simile	TOTAL
			Personification				
Test 1. <u>The Japanese Quince</u>	0	0	1			1	2
Test 2. <u>Another Part of the Sky</u>	5	6	3			1	15
Test 3. <u>The Hawk</u>	2	5	11			4	22

	Type I Post-Tests							TOTAL
	Allit.	Metaphor	Onomatopoeia	Oxymoron	Person.	Simile		
Test 1. <u>The Old Man at the Bridge</u>	0	0	0	0	0	0	0	0
Test 2. <u>The Traveler</u>	3	2	1	0	7	1	14	
Test 3. <u>Flight</u>	5	4	0	1	6	2	18	

TABLE III

FIGURES OF SPEECH: TYPE II PRE-AND POST TESTS (IDENTIFICATION)

	<u>Type II Pre-tests</u>									TOTAL
	Allit.	Hyperbole	Metaph.	Meton.	Onom.	Oxym.	Person.	Rhet. Q.	Simile	
<u>Flight</u>	9	1	0	1	2	0	8	0	2	23
<u>The Ballroom</u>	4	0	5	1	0	2	11	2	3	28
	<u>Type II Post-tests</u>									
<u>The Sculptor's Funeral</u>	6	0	3	1	2	0	3	0	2	17
<u>The Hawk</u>	4	0	3	0	0	0	22	0	2	31

portion of the test were figured on a percentage basis; however, since it was possible for students to underscore phrases which were not figurative, it was possible for students to receive minus or negative scores.

Pre-tests were administered to the control group by the regular teacher and to the experimental group by the investigator on the first and third days of the experiment, respectively.

Post-tests of the same two types were constructed in the same manner. (See Appendices D and E.) Selections were those which contained alliteration or other figures of speech that had not been specifically pointed out by the investigator or discussed in class periods with the experimental group. Type I Post-test was administered on the final day of the teaching unit; Type II Post-test was administered on the next school day. All post-tests were again administered to the control group by the regular teacher and to the experimental group by the investigator. Scores again were figured on a percentage basis.

Treatment of the Data

Scores obtained on the Lorge-Thorndike Intelligence Test, Non-verbal Form, Level 5, Form A; the Nelson-Denny Reading Test, Form B; and scores obtained on both types of the pre-tests of comprehension were used as the co-variables.

Scores obtained on both types of the post-test were used as the dependent variable. Group scores and group means were the independent variables.

The hypotheses as stated were tested by subjecting the data to an analysis of co-variance so that initial differences between groups

could be "partialled out" of the experimental variables. Thus a more precise test of the significance of the difference between the adjusted group means could be made than would otherwise have been possible.

This analysis was performed at the Oklahoma State University Computer Center. The computer was programmed for the three co-variables (pre-test scores, IQ scores, and Reading test scores) and analysis of co-variance obtained.

The differences between achievement of the control and the experimental group scores and the difference between the means of the scores as measured by the post-tests were tested by the t test.

Summary

This chapter has described the population studied in the investigation, the instruments used in the collection of data, and the description of the treatment of the data.

The population studied in this investigation consisted of seniors in high school who had attended three previous literature courses; all were from the Stillwater, Oklahoma, high school.

The measuring instruments used were the Lorge-Thorndike Intelligence Test, Nonverbal Form, Level 5, administered on the school day prior to the beginning of the experiment; the Nelson-Denny Reading Test, Form B, administered approximately two months prior to the beginning of the experiment; Pre-tests of two types--Cloze and figure of speech identification; and Post-tests of the same two types. Scores on the IQ test, the reading test, and the Pre-tests were the co-variables. Scores on the Post-tests were dependent variables. Scores between groups and between group means were the independent variables.

Analysis of co-variance was used to adjust for more precise significance of the initial differences between the group means. The t test was used to measure for significant differences between achievement of the control and the experimental group scores and the differences between the means.

CHAPTER IV

TREATMENT OF DATA AND ANALYSIS OF RESULTS

Introduction

This chapter contains a detailed account of the statistical treatment of the data and the analysis of the results.

The data was subjected to an analysis of co-variance so that initial differences between groups could be partialled out of the experimental variables. This analysis was performed at the Oklahoma State University Computer Center according to the BMD04V program. Differences between mean achievement for all groups were also tested for statistical significance using the t test.

The data will be discussed under the following divisions:

1) hypothesis I as set forth in Chapter III; and 2) hypothesis II as set forth in Chapter III.

Prior to the experimental teaching, both the control and the experimental groups were administered the following tests:

The Lorge-Thorndike Intelligence Test, nonverbal Form, Level 5, (Form A) and

The Nelson-Denny Reading Test, (Form B).

At the beginning of the study, both groups were given two types of Pre-tests: Type I Pre-test or three 500-word story-passages from which every 10th word had been deleted according to the standard Cloze

procedure; and Type II Pre-test, or two 500-word story-passages on which students were asked to underscore and identify figures of speech.

At the end of the experiment, both groups were given both types of Post-tests.

The total scores and sub-test scores on the tests administered prior to the experiment, as well as the Pre-test scores, were used as the co-variables (independent variables). Scores on the Post-tests were used as the dependent variables.

Tests of the Hypotheses

Hypothesis I: There is no significant difference in the comprehension scores of students as revealed by the Cloze procedure when the level of difficulty of material is held constant by the Dale-Chall readability formula but the quantity of figures of speech varies.

It may be noticed that, according to the Dale-Chall Correction Table, the story from which Pre-test I was constructed was given a Corrected Grade-Level of 9th-10th and that Pre-test 3 was given a Corrected Grade-Level of 7th-8th. It was felt, however, that in actual fact the formula raw scores (7.0 and 6.54) are so close that the degree of difference is not so great as the Corrected Grade-Levels would appear to indicate. For this reason, scores from these tests were accepted to test the hypothesis.

In order to test Hypothesis I, an analysis of co-variance was applied using the co-variables of total and sub-test scores on the Lorge-Thorndike Intelligence Test and the Nelson-Denny Reading Test as well as the scores obtained on Type I Pre-test 1. Scores on Type I Pre-test 3 were used as the dependent variable. Type I Pre-test 1 contained 22

figures of speech; Type I Pre-test 3 contained 2 figures of speech.
(See Table II, p. 39)

Table IV shows the result of the analysis of co-variance.

Treatment Numbers 1 and 2 comprise the Control Group; Treatment Numbers 3 and 4 comprise the Experimental Group. The analysis reveals that there is no evidence to reject the hypothesis.

Hypothesis II: There is no significant difference in comprehension of students at the 12th grade level when the teaching of figures of speech is the specific reading skill emphasized in the teaching of selected short stories and when the teaching of these figures is not emphasized.

Co-variables used to test this hypothesis were the total and sub-test scores from the Lorge-Thorndike Intelligence Test, the Nelson-Denny Reading Test, and scores on Type I Pre-tests 1, 2, and 3 and Type II Pre-tests 1 and 2. There were five dependent variables: scores on Type I Post-tests 1, 2, and 3 and Type II Post-tests 1 and 2. Each of these dependent variables was treated separately. Tables V, VI, VII, VIII, and IX show the results of the analysis of co-variance.

It is interesting to observe that there was a significant difference between the Control and the Experimental Group scores only on this final test. The F score here is significant at the .01 level. All other F scores were not significant at the .05 level.

The Control Groups and the Experimental Groups were compared using a t test. This was done by combining the two Control Groups and the two Experimental Groups. The error term was the pooled estimate of variance of these groups. A significant difference was found at the .05 level between the group scores on the Type II Pre-test (see Table X).

TABLE IV
ANALYSIS OF CO-VARIANCE FOR HYPOTHESIS I

Source	DF	YY	Sum-Squares (Due)	Sum-Squares (About)	DF	Mean-Square
Treatment (Between)	3	99.3125				
Error (Within)	75	3037.0000	842.7629	2194.2371	66	33.2460
Treatment + Error (total)	78	3136.3125	892.1909	2244.1216	69	
Difference for testing adjusted Treatment means				49.8845	3	16.6282

F(3, 66) + 0.500 NS*

Adjusted Means and Standard Errors

Treatment No.	Treatment Mean	Adjusted Mean	SE Adjusted
1	48.0000	45.2413	1.4043
2	45.0000	26.8744	1.8803
3	46.9564	47.5352	1.3171
4	45.6667	47.6622	1.5674

*Not significant

TABLE V
DIFFERENCES BETWEEN CONTROL AND EXPERIMENTAL GROUP SCORES
ON TYPE I POST-TEST 1 (CLOZE)

Source	DF	YY	Sum-Squares (Due)	Sum-Squares (About)	DF	Mean-Square
Treatment (Between)	3	513.6875				
Error (Within)	75	4366.1250	1519.3110	2846.8140	65	43.7971
Treatment + Error (Total)	78	4879.8125	1979.3906	2900.4219	68	
Difference for testing adjusted Treatment means				53.6079	3	17.8693

F(3, 65) = 0.408 NS*

<u>Adjusted Means and Standard Errors</u>			
Treatment No.	Treatment Mean	Adjusted Mean	SE Adjusted
1	67.5385	64.9825	1.8262
2	61.8333	64.9258	2.2742
3	62.7826	62.6470	1.5056
4	61.6667	63.4701	1.9125

*Not significant

TABLE VI
DIFFERENCES BETWEEN CONTROL AND EXPERIMENTAL GROUP SCORES
ON TYPE I POST-TEST 2 (CLOZE)

Source	DF	YY	Sum-Squares (Due)	Sum-Squares (About)	DF	Mean-Square
Treatment (Between)	3	1025.5000				
Error (Within)	75	4877.2500	1659.9758	3217.2742	65	49.4965
Treatment + Error (Total)	78	5902.7500	2527.4670	3375.2830	68	
Difference for testing adjusted Treatment means				158.0088	3	52.6696

F(3, 65) = 1.064 NS*

Adjusted Means and Standard Errors

Treatment No.	Treatment Mean	Adjusted Mean	SE Adjusted
1	63.0769	59.5182	1.9414
2	56.1667	57.5772	2.4176
3	60.0869	61.1022	1.6006
4	53.8889	56.7915	2.0331

*Not Significant

TABLE VII
DIFFERENCES BETWEEN CONTROL AND EXPERIMENTAL GROUP SCORES
ON TYPE I POST-TEST 3 (CLOZE)

Source	DF	YY	Sum-Squares (Due)	Sum-Squares (About)	DF	Mean-Square
Treatment (Between)	3	336.5000				
Error (Within)	75	6278.2500	1580.7954	4697.4531	65	72.2685
Treatment + Error (Total)	78	6614.7500	1884.6365	4730.1133	68	
Difference for testing adjusted Treatment Means				36.6602	3	10.8867

F(3, 65) = 0.151 NS*

Adjusted Means and Standard Errors

Treatment No.	Treatment Mean	Adjusted Mean	SE Adjusted
1	66.0000	62.5104	2.3459
2	62.000	64.0889	2.9213
3	61.4783	62.2949	1.9341
4	61.5555	64.1599	2.4567

*Not Significant

TABLE VIII
DIFFERENCES BETWEEN CONTROL AND EXPERIMENTAL GROUP SCORES
ON TYPE II POST-TEST 1 (IDENTIFICATION)

Source	DF	YY	Sum-Squares (Due)	Sum-Squares (About)	DF	Mean-Square
Treatment (Between)	3	2715.5835				
Error (Within)	75	30133.7539	7531.2578	22602.4961	65	347.7305
Treatment + Error (Total)	78	32849.3398	10046.8281	22802.5117	68	
Difference for testing adjusted Treatment Means				200.0156	3	66.6719

F(3, 65) = 0.192 NS*

Adjusted Means and Standard Errors

Treatment No.	Treatment Mean	Adjusted Mean	SE Adjusted
1	-7.8462	-2.8407	5.1458
2	1.0833	-0.1797	6.4081
3	6.0435	1.6452	4.2424
4	3.8333	3.0652	5.3889

*Not Significant

TABLE IX

DIFFERENCES BETWEEN CONTROL AND EXPERIMENTAL GROUP SCORES
ON TYPE II POST-TEST 2 (IDENTIFICATION)

Source	DF	YY	Sum-Squares (Due)	Sum-Squares (About)	DF	Mean-Square
Treatment (Between)	3	3777.3398				
Error (Within)	75	12613.5469	2246.3813	10367.1641	65	159.4948
Treatment + Error (Total)	78	16390.8867	2923.4058	13467.4805	68	
Difference for testing adjusted Treatment Means				3100.3164	3	1033.4387

F(3, 65) = 6.479 - Significant at the .01 level

Adjusted Means and Standard Errors

Treatment No.	Treatment Mean	Adjusted Mean	SE Adjusted
1	3.0000	1.1143	3.4850
2	1.3333	1.8508	4.3399
3	11.7391	11.8085	2.8732
4	19.4444	21.7344	3.6497

TABLE X

T TEST SCORE TYPE II PRE-TEST 1

Sample No.	Mean	Variance	Std Dev	Std Err of the Mean	Sample Size
1	6.13158	396.441	19.9108	3.22996	38
2	16.0244	281.724	16.7846	2.62132	41
T-Statistic = 2.39372 - Degrees of Freedom = 77 Significant at the .05 level					

TABLE XI

T TEST SCORE TYPE II POST-TEST 2

Sample No.	Mean	Variance	Std Dev	Std Err of the Mean	Sample Size
1	2.47368	76.0398	8.72008	1.41458	38
2	15.1220	260.560	16.1418	2.52093	41
T-Statistic = 4.28421 - Degrees of Freedom = 77 Significant at the .01 level					

Table XI indicates the t score for Type II Post-test 2 and shows significance at the .01 level.

Analysis reveals that there is no evidence to reject the hypothesis. It is also evident that precision did not increase considerably despite the use of the ten co-variables (all IQ scores, all reading test scores, and all pre-test scores). The added complication of using these co-variables was of no particular value in this study.

Summary

This chapter has presented a detailed analysis of the statistical treatment of the data. There was no evidence in this study to reject the following hypotheses:

1. There is no significant difference in the comprehension scores of students as revealed by the Cloze procedure when the level of difficulty of material is held constant by the Dale-Chall readability formula but the quantity of figures of speech varies.

2. There is no significant difference in comprehension of students at the 12th grade level when the teaching of figures of speech is the specific reading skill emphasized in the teaching of selected short stories and when the teaching of these figures is not emphasized.

The following hypothesis is rejected based on this study:

3. The variable, figurative language, is a variable which may provide more validity for a readability formula for the short story than formulas which fail to include this variable.

CHAPTER V

SUMMARY AND CONCLUSIONS

General Summary of the Investigation

This investigation was concerned with attempting to identify figurative language as an element of literature which has not been considered in the development of existing readability formulas and to determine if this factor provided a measure of reading difficulty which resulted in students' loss of comprehension. Two different problems were investigated: 1) determining whether or not the number of figures of speech within a given segment of a short story increases the reading difficulty of that passage, and 2) determining whether or not teaching of figurative language as a specific reading skill results in a gain in comprehension of printed material by students. The stated hypotheses that no significant differences existed were treated statistically.

Students enrolled in the 12th grade at C. E. Donart Senior High School, Stillwater, Oklahoma, during the spring term, 1969, from whom satisfactory scores on intelligence tests and reading tests were obtained constituted the original sample. The final sample, 79 students, was comprised of 40 boys and 39 girls. Thirty-eight students (20 girls and 18 boys) made up the Control Group; 41 students (19 girls and 22 boys) made up the Experimental Group. Students in both groups were administered two types of pre-tests: Type I Pre-tests 1, 2, and 3 involving the Cloze procedure and Type II Pre-tests 1 and 2 involving

simple identification of figures of speech. These test scores as well as total and sub-test scores from the Lorge-Thorndike Intelligence Test and the Nelson-Denny Reading Test constituted the ten co-variables. Students in both groups were administered post-tests of both types (the dependent variables).

Conclusions

According to statistical evidence, the number of figures of speech within a 500-word story-passage forming a test of comprehension according to the Cloze technique does not affect the comprehension of the reader. There were no significant differences of achievement of students according to scores on Pre-test 1 (Type I) and Pre-test 3 (Type I). The first pre-test contained twenty-two figures of speech; the third Pre-test contained two figures of speech. This result would appear to indicate that the amount of figurative language (or the numbers of figures of speech) neither increases nor decreases the difficulty of the passage, or hence, the readability of it or possibly of the story.

At the conclusion of the experiment, there was no significant difference in achievement between the Control Group and the Experimental Group as indicated by scores on Type I Post-tests 1, 2, and 3. This statistical evidence would appear to indicate that even though figurative language is pointed out to students and attempt is made to teach for transfer, no gain in comprehension of printed material results from emphasis upon figurative language as a specific reading skill.

However, as indicated by results of Type II Post-test 2, students in the experimental group appeared to be more alert to the existence

of figurative language within the printed story-passage. There was statistical evidence (see Table IX, p. 52) that these students could identify figures of speech more accurately than could students in the control group. This finding, however, is not truly meaningful in the light of the stated hypotheses although it was to be expected. There is apparently no relationship in this study between ability to recognize and identify figures of speech and the ability to comprehend meaning.

Finally, the use of these co-variables has indicated that, in future, substitutions of co-variables other than the Lorge-Thorndike Intelligence Test scores and the Nelson-Denny Reading Test scores should be made.

Implications and Recommendations

Although this study involved the use of the Cloze technique as a test of reading comprehension, there is reason to suspect that the use of the standard Cloze procedure resulted in less accurate test of the hypotheses than would the use of the modified Cloze procedure. Had the Cloze been modified to delete key words occurring only within a figure of speech, scores might have been affected. Furthermore, had synonyms been accepted for deletion responses, especially within phrases containing figures of speech, scores might also have been affected.

Despite the fact that no significant differences were found between groups upon analysis of any of the Type I Post-test scores (using the Cloze technique), the Cloze may still be an adequate measure of comprehension. However, the Cloze procedure may fail to measure comprehension of subtleties of concept as found in imaginative literature. Therefore, replication of this study should include a correlation

between scores acquired on Cloze tests and scores acquired on teacher-made comprehension tests constructed to evaluate students' understanding of stories.

The most significant problems to be avoided in future replication exist, probably, not within the design itself but within peripheral factors. For example, the teacher variable can never be entirely controlled for; however, it appears that teaching time may be lost in establishing rapport when students are subjected to a substitute teacher for any study unit. A second variable which appears to have affected adversely the present study was the time factor. Although 15 English class periods were set aside for the experiment, actual teaching periods were reduced to ten. Two class periods, as indicated in Chapter III, were taken up by testing; three additional periods fell out unexpectedly because of school assemblies. Furthermore, although effort was made to teach for transfer, this investigator attempted to reduce the effect of the teacher variable by not stressing the importance of figurative language disproportionately; that is, substantial amounts of class time were devoted to teaching students characterization, setting, plot, theme, tone, and various other components of the short story.

It is recommended, then, that this study be replicated to include the following expansion of design: 1) having the investigator serve as teacher of both control and experimental groups; 2) extending the teaching time to cover a period of at least 20 class periods exclusive of testing days and occurring in the fall of the academic year; and 3) running a correlation test between the Cloze and at least one other type of test of student comprehension of stories.

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APPENDIX A

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APPENDIX B

TYPE I PRE-TESTS - CLOZE

PRE-TEST 1

THE HAWK

Liam O'Flaherty

He breasted the summit of the cliff and then rose in wide circles to the clouds. _____ their under-tendrils passed about his outstretched wings, he surged _____ inland. Gliding and dipping his wings at intervals, he _____ across the roof of the firmament, with his golden _____ eyes turned down, in search of prey, toward the _____ earth that lay far away below, beyond the shimmering _____ of the vast blue sky.

Once the sunlight flashed _____ his gray back, as he crossed an open space _____ two clouds. Then again he became a vague, swift _____, rushing through the formless vapor. Suddenly his fierce heart _____, as he saw a lark, whose dewy back was _____ by the radiance of the morning light, come rising _____ him from a green meadow. He shot forward at _____ speed, until he was directly over his mounting prey. _____, he began to circle slowly, with his wings stiff _____ his round eyes dilated, as if in fright. Slight _____ passed along his skin, beneath the compact armor of _____ plumage--like a hunting dog that stands poised and _____ before his game.

The lark rose awkwardly at first, _____ disjointed notes as he leaped and circles to gain _____. Then he broke into full-throated song and soared straight _____, drawn to heaven by the power of his glorious _____, and fluttering his wings like a butterfly.

The hawk _____ until the songbird had almost reached the limit of _____ climb. Then he took aim and swooped. With his _____ half-closed, he raked like a meteor from the clouds. _____ lark's warbling changed to a shriek of terror as _____ heard the fierce rush of the charging hawk. Then _____ swerved aside, just in time to avoid the full _____ of the blow. Half-stunned, he folded his wings and _____ headlong towards the earth, leaving behind a flutter of _____ that had been torn from his tail by the _____ of his enemy.

When he missed his mark, the _____ at once opened wide his wings and canted them _____ stay his rush. He circled once more above his _____ prey, took aim, and stooped again. This time the _____ did nothing to avoid the kill. He died the _____ he was struck; his inert wings unfolded. With his _____ dangling from his limp throat, through which his lovely _____ had just been pouring, he came tumbling down, convoyed _____ the closely circling hawk. He struck earth on a _____ of soft brown sand, beside a shining stream.

The _____ stood for a few moments over his kill, with _____ lewd purple tongue lolling from his open beak and _____ black-barred breast heaving from the effort of pursuit. Then _____ secured the carcass in his claws, took wing, and _____ off to the cliff where his mate was hatching _____ a broad ledge, beneath a massive tawny-gold rock that _____, over-arching, to the summit.

It was a lordly place, _____ the apex of a narrow cove, and so high _____ the sea that the roar of the breaking waves reached there only as a gentle murmur.

PRE-TEST 2

ANOTHER PART OF THE SKY

Nadine Gordimer

Coming across the dark grass from the main building to his dark house at eleven o'clock _____ a Sunday night he stumbled against the edgings of _____. End up, all sunk into the earth at the _____ level, they formed a serrated border along every pathway _____ round every flower bed in the place. The young _____ had laid them with all their race's peasant pleasure _____ simple repetitive patterns, some memory beneath their experience of _____ corrugated iron and hessian recalling to their hands the _____ daub of white zigzag round a clay hut. That _____ come, he supposed with a smile: they would want _____ for the bricks.

There were roses growing behind the _____, tattering the darkness with blacker spangles of reaching foliage. _____ boys had planted those too. "The man who pulled _____ prison walls and grew geraniums in their place"--of _____ the papers had got it wrong. Wrong, all wrong. _____ things are written down they go wrong. Mistakes are _____ least of it; by the time they are stamped _____ print, words have spilt meaning and whatever of truth _____ have managed to scoop up. Geraniums for roses; that _____ nothing: but "the man who pulled down prison walls _____ grew geraniums in their place"--that was a glib _____ up that left everything out. As a fact it _____ true; in the nine years that he had been _____ of the reformatory, he had taken down the six-foot _____ with the broken bottles encrusted on the top, he

_____ set the boys gardening, he had helped them build _____, begged musical instruments for them. The photograph of him _____ at his desk, dipping a pen. The photograph of _____ boys sitting cross-legged in the garden, numbers on their _____ backs, gleams of sun on their heads cropped of _____ . . . When did that moment, the moment of the article, _____ all the articles that had been written about him, _____ the lectures that had been given in his honor-- _____ did it exist?

As his feet sounded suddenly on _____, he made a little sighing noise, casting off the _____ unreality of it. It left out everything. What had _____ to do with now, the sleeping darkness of the _____ behind him, the burning starts of red and flashes _____ print jittering his inner sight, the quiet of the _____ veld darkness; the worry that filled all the spaces _____ his body as his breath did.

This morning he _____ stood amidst the voice of the boys at church _____, this afternoon he had written the draft of a _____ reform pamphlet, after supper he had sat with a _____ full of reports. His nostrils were wide with a _____ of concentration, his eyes did not see. His wife _____ at some garment in her lap without looking; he _____ conscious now and then of the quiet wink of _____ glasses as she watched him.

All the day, half _____ night; the worry had been with him all the _____. Now the surface of the day had been rolled away, and he was left with the worry, he took it with him as he went up the three steps, over her door mat made of old tire-strips, through the door that gave to his thumb as though the latch had been waiting for his touch.

PRE-TEST 3

THE JAPANESE QUINCE

John Galsworthy

As Mr. Nilson, well known in the City, opened the window of his dressing room on Campden Hill, _____ experienced a peculiar sweetish sensation in the back of _____ throat, and a feeling of emptiness just under his _____ rib. Hooking the window back, he noticed that a _____ tree in the Square Gardens had come out in blossom, _____ that the thermometer stood at sixty. "Perfect morning," he _____; "spring at last!"

Resuming some meditations on the price _____ Tintos, he took up an ivory-backed handglass and scrutinized _____ face. His firm, round, well-opened, clear gray eyes, wore _____ reassuring appearance of good health. Putting on his black _____ coat, he went downstairs.

In the dining room his _____ paper was laid out on the sideboard. Mr. Nilson had _____ taken it in his hand when he again became _____ of that queer feeling. Somewhat concerned, he went to _____ French window and descended the scrolled iron steps into _____ fresh air. A cuckoo clock struck eight.

"Half an _____ to breakfast," he thought; "I'll take a turn in _____ Gardens."

He had them to himself, and proceeded to _____ the circular path with his morning paper clasped behind _____. He had scarcely made two revolutions, however, when it _____ borne in on him that, instead of going away _____ the fresh air, the feeling had

increased. He drew _____ deep breaths, having heard deep breathing recommended by his _____ doctor; but they augmented rather than diminished the sensation-- _____ of some sweetish liquor in course within him, together _____ a faint aching just above his heart. Running over _____ he had eaten the night before, he could recollect _____ unusual dish, and it occurred to him that it _____ possibly be some smell affecting him. But he could _____ nothing except a faint sweet lemony scent, rather agreeable _____ otherwise, which evidently emanated from the bushes budding in _____ sunshine. He was on the point of resuming his _____, when a black-bird close by burst into song, and, _____ up, Mr. Nilson saw at a distance of perhaps five _____ a little tree, in the heart of whose branches _____ bird was perched. He stood staring curiously at this _____, recognizing it for that which he had noticed from _____ window. It was covered with young blossoms, pink and _____ and little bright green leaves both round and spiky; _____ on all this blossom and these leaves the sunlight _____.

Mr. Nilson smiled; the little tree was so alive and _____! And instead of passing on, he stayed there smiling _____ the tree.

"Morning like this!" he thought; "and here _____ am the only person in the Square who has _____--to come out and--!" But he had no sooner _____ this thought than he saw quite near him a _____ with his hands behind him, who was also staring _____ and smiling at the little tree. Rather taken aback, Mr. Nilson _____ to smile, and looked furtively at the stranger. _____ was his next-door neighbor, Mr. Tandram, well known in the _____, who had occupied the adjoining house for some five years.

APPENDIX C

TYPE II PRE-TESTS - IDENTIFICATION

PRE-TEST 1

John Steinbeck

"Flight"

Pepe rested the big rifle across the saddle in front of him. He let the horse walk up the hill and he didn't look back. The stony slope took on a coat of short brush so that Pepe found the entrance to a trail and entered it.

When he came to the canyon opening, he swung once in his saddle and looked back, but the houses were swallowed in the misty light. Pepe jerked forward again. The high shoulder of the canyon closed in on him. His horse stretched out its neck and sighed and settled to the trail.

It was well-worn path, dark soft leafmold earth strewn with broken pieces of sandstone. The trail rounded the shoulder of the canyon and dropped steeply into the bed of the stream. In the shallows the water ran smoothly, glinting in the first morning sun. Small round stones on the bottom were as brown as rust with sun moss. In the sand along the edges of the stream the tall, rich wild mint grew, while in the water itself the cress, old and tough, had gone to heavy seed.

The path went into the stream and emerged on the other side. The horse sloshed into the water and stopped. Pepe dropped his bridle and let the beast drink of the running water.

Soon the canyon sides became steep and the first giant sentinel redwoods guarded the trail, great round red trunks bearing foliage as green and lacy as ferns. Once Pepe was among the trees, the sun was lost. A perfumed and purple light lay in the pale green of the

underbrush. Gooseberry bushes and blackberries and tall ferns lined the stream, and overhead the branches of the redwoods met and cut off the sky.

Pepe drank from the water bag, and he reached into the flour sack and brought out a black string of jerky. His white teeth gnawed at the string until the tough meat parted. He chewed slowly and drank occasionally from the water bag. His little eyes were slumberous and tired, but the muscles of his face were hard-set. The earth of the trail was black now. It gave up a hollow sound under the walking hoofbeats.

The stream fell more sharply. Little waterfalls splashed on the stones. Five-fingered ferns hung over the water and dropped spray from their finger tips. Pepe rode half over his saddle, dangling one leg loosely. He picked a bay leaf from a tree beside the way and put it into his mouth for a moment to flavor the dry jerky. He held the gun loosely across the pommel.

Suddenly he squared in his saddle, swung the horse from the trail and kicked it hurriedly up behind a big redwood tree. He pulled up the reins tight against the bit to keep the horse from whinnying. His face was intent and his nostrils quivered a little.

A hollow pounding came down the trail, and a horseman rode by, a fat man with red cheeks and a white stubble beard.

PRE-TEST 2

William Sansom

"The Ballroom"

But old? It was as alive as it had ever been. And in its very center stood a tall Christmas Tree bright with yellow candles. Colored globes caught the fireshadow, tinsel laced its sparkling snow about the dark branches, and all danced with light; the yellow candles burned steadily upwards, yet sometimes shuddered--it must have been a draught from the fire--leaning afraid all one way, and then as suddenly resuming their solid upward flame.

He stood there held with wonder. It was a magical scene--all polish, wealth, and warmth . . . but empty, no sign of a single person.

And the minutes passed. The last of the red evening sun fell down through the black wet trees outside. Lesseps thought: How exactly like the colored plates in a book of fairy stories, there is no difference, the old red sun casts its strange winter light and the trees become huge, you can still see the drip and drab of ordinary life, but it recedes, light and shadow are really in charge, you're more in an old book than anywhere else. Then he smelled life again, as the sun flashed down and the first sharp nose of winter's chill invigorated the night. Soon he would see his breath.

He peered back into the window. Nobody had come. Nothing had moved but the candles, the fire flames, and the shadows that were always moving. And this motionless moving, this empty liveliness, gave the room more death than if the house had been shut and dark and truly dead; as with a ghost-ship, all sails set, all lights ablaze--empty on

an empty ocean; or the shop-window stage of a room, playing the dead life of dummies and never-used furniture, all lights on and nothing, nothing ever to happen. But behind the doors of such rooms people wait; the doors hold back unbelievable crowds waiting to burst in.

And that, then, was what actually happened, unbelievably, exactly in front of Lesseps' one peering eye. So startling him that he drew back behind the window frame.

Abruptly the room had poured full of children!

A dam of children had burst, it was like that moment in the empty street when a morning of children breaks out of the cinema and the street is stopped with arms and legs and voices whirling and screaming over every inch. He quickly drew back. Where? How? How did they get there . . . ? And all those children had been little girls! Ten, twenty, thirty little girls in white party dresses flooded in through the door! And all had been dressed, he thought, surely alike? All in white, all in sashes alive in the light, blue bows bobbing in each head of curls; all dancing.

He peered round the window frame again. With the air chilling, the window glass was beginning to mist: safe enough, he would never be seen now.

He saw instantly what a mistake he had made--this was after all no room full of girls, it was of course one child only, one child reflected in a dozen mirrors.

APPENDIX D

TYPE I POST-TESTS - CLOZE

POST-TEST 1

FLIGHT

John Steinbeck

About fifteen miles below Monterey, on the wild coast, the Torres family had their farm, a _____ sloping acres above a cliff that dropped to the _____ reefs and to the hissing white waters of the _____. Behind the farm the stone mountains stoop up against _____ sky. The farm buildings huddled like the clinging aphids _____ the mountain skirts, crouched low to the ground as _____ the wind might blow them into the sea. The _____ shack, the rattling, rotting barn were gray-bitten with sea _____, beaten by the damp wind until they had taken _____ the color of the granite hills. Two horses, a _____ cow and a red calf, half a dozen pigs _____ a flock of lean, multicolored chickens stocked the place. _____ little corn was raised on the sterile slope, and _____ grew short and thick under the wind, and all _____ cobs formed on the landward sides of the stalks.

Mama Torres, _____ lean, dry woman with ancient eyes, had ruled _____ farm for ten years, ever since her husband tripped _____ a stone in the field one day and fell _____ length on a rattlesnake. When one is bitten on _____ chest there is not much that can be done.

Mama Torres _____ three children, two undersized black ones of twelve _____ fourteen, Emilio and Rosy, whom Mama kept fishing on _____ rocks below the farm when the sea was kind _____ when the truant officer was in some distant part _____ Monterey.

County. And there was Pepe, the tall smiling son _____ nineteen, a gentle, affectionate boy, but very lazy. Pepe _____ a tall head, pointed at the top, and from _____ peak coarse black hair grew down like a thatch _____ around. Over his smiling little eyes Mama cut a _____ bang so he could see. Pepe had sharp Indian _____ and an eagle nose, but his mouth was as _____ and shapely as a girl's mouth, and his chin _____ fragile and chiseled. He was loose and gangling, all _____ and feet and wrists, and he was very lazy. _____ thought him fine and brave, but she never told _____ so. She said, "Some lazy cow must have got _____ thy father's family, else how could I have a _____ like thee." And she said, "When I carried thee, _____ sneaking lazy coyote came out of the brush and _____ at me one day. That must have made thee _____."

Pepe smiled sheepishly and stabbed at the ground with _____ knife to keep the blade sharp and free from _____. It was his inheritance, that knife, his father's knife. _____ long heavy blade folded back into the black handle. _____ was a button on the handle. When Pepe pressed _____ button, the blade leaped out ready for use. The _____ was with Pepe always, for it had been his _____ knife.

One sunny morning when the sea below the _____ was glinting and blue and the white surf creamed _____ the reef, when even the stone mountains looked kindly, Mama Torres _____ out the door of the shack, "Pepe, I have a labor for thee."

POST-TEST 2

THE TRAVELER

Wallace Stegner

He was rolling in the first early dark down a snowy road, his headlights pinched between _____ walls of trees, when the engine coughed, recovered, coughed _____, and died. Down a slight hill he coasted in _____, working the choke, but at the bottom he had _____ pull over against the three-foot wall of plowed snow. _____ creaked under the tires as the car eased to _____ stop. The heater fan unwound with a final tinny _____.

Here in its middle age this hitherto dependable mechanism _____ betrayed him, but he refused to admit immediately that _____ was betrayed. Some speck of dirt or bubble of _____ in the gas line, some momentary short circuit, some _____ of snow on distributor points or plug connections--something _____ would cure itself before long. But turning off the _____ and pressing on the starter brought no result; he _____ the choke out for several seconds, and got only _____ hopeful stink of gasoline; he waited and let the _____ carburetor rest and tried again, and nothing. Eventually he _____ the door and stepped out onto the packed snow _____ the road.

It was so cold that his first _____ turned to iron in his throat, the hairs in _____ nostrils webbed into instant ice, his eyes stung and _____. In the faint starlight and the bluish luminescence of _____ snow everything beyond a few yards away swam deceptive _____ without depth, glimmering with things half seen or

imagined. _____ the dead car he stood with his head bent, _____, and there was not a sound. Everything on the _____ might have died in the cold.

Indecisively seeking help, _____ walked to the top of the next rise, but _____ faintly-darker furrow of the road blurred and disappeared in _____ murk, the shadows pressed inward, there was no sign _____ a light. Back at the car he made the _____ that the morality of self-reliance demanded: trying to see _____ the backward diffusion of the headlamps, he groped over _____ motor feeling for broken wires or loose connections, until _____ had satisfied himself that he was helpless. He had _____ all along that he was.

His hands were already _____ with cold, and around his ankles between low shoes _____ trouser cuffs he felt the chill like leg irons. _____ he had last stopped, twenty miles back, it had _____ near zero. It could be ten or fifteen below _____. So what did he do, stranded in mid-journey fifty _____ or more from his destination? He could hardly go _____ for help, leaving the sample cases, because the right _____ door didn't lock properly. A little jiggling swung it _____. And all those drugs, some of them designed to _____ anything--wonder drugs, sulphas, streptomycin, aureomycin, penicillin, pills and _____ and unguents--represented not only a value but a _____. They should not be left around loose. Someone might _____ they really would cure anything.

Not quite everything, he _____ the blue darkness. Not a fouled-up distributor or a _____ coil box. Absurdly, there came into his mind a fragment of an ancient hymn to mechanical transport. . .

POST-TEST 3

OLD MAN AT THE BRIDGE

Ernest Hemingway

An old man with steel-rimmed spectacles and very dusty clothes sat by the side of the _____. There was a pontoon bridge across the river and _____, trucks, and men, women, and children were crossing it. _____ mule-drawn carts staggered up the steep bank from the _____ with soldiers helping push against the spokes of the _____. The trucks ground up and away heading out of _____ all and the peasants plodded along in the ankle-deep _____. But the old man sat there without moving. He _____ too tired to go any farther.

It was my _____ to cross the bridge, explore the bridgehead beyond, and _____ out to what point the enemy had advanced. I _____ this and returned over the bridge. There were not _____ many carts now and very few people on foot, _____ the old man was still there.

"Where do you _____ from?" I asked him.

"From San Carlos," he said, and _____.

That was his native town and so it gave _____ pleasure to mention it and he smiled.

"I was _____ care of animals," he explained.

"Oh," I said, not _____ understanding.

"Yes," he said, "I stayed, you see, taking _____ of animals.

I was the last one to leave _____ town of San Carlos."

He did not look like a _____ nor a herdsman and I looked at his black _____ clothes and his gray dusty face and his steel-rimmed _____ and said, "What animals were they?"

"Various animals," he _____, and shook his head. "I had to leave them."

_____ was watching the bridge and the African-looking country of _____ Ebro Delta and wondering how long now it would be _____ we would see the enemy, and listening all the _____ for the first noises that would signal that ever-mysterious _____ called contact, and the old man still sat there.

"_____ animals were they?" I asked.

"There were three animals _____," he explained. "There were two goats and a cat _____ then there were four pairs of pigeons."

"And you _____ to leave them?" I asked.

"Yes. Because of the _____. The captain told me to go because of the _____."

"And you have no family?" I asked, watching the _____ end of the bridge where a few last carts _____ hurrying down the slope of the bank.

"No," he _____, "only the animals I stated. The cat, of course, _____ be all right. A cat can look out for _____, but I cannot think what will become of the _____."

"What politics have you?" I asked.

"I am without _____," he said, "I am seventy-six years old. I have _____ twelve kilometers now and I think now I can _____ no further."

"This is not a good place to _____," I said. "If you can make it, there are _____ up the road where it forks for Tortosa."

"I _____ wait a while," he said, "and then I will _____.
Where do the trucks go?"

"Towards Barcelona," I told _____.

"I know no one in that direction," he said, "but thank you very much. Thank you again very much."

APPENDIX E

TYPE II POST-TESTS - IDENTIFICATION

POST-TEST 1

Willa Cather

"The Sculptor's Funeral"

Two clambered down from the driver's seat of a hearse that stood backed up against the siding. They straightened their stooping shoulders and lifted their heads, and a flash of momentary animation kindled their dull eyes at that cold, vibrant scream, the world-wide call for men. It stirred them like the note of a trumpet; just as it had often stirred the man who was coming home tonight, in his boyhood.

The night express shot, red as a rocket, from out of the eastward marsh lands and wound along the river shore under the long lines of shivering poplars that sentineled the meadows, the escaping steam hanging in gray masses against the pale sky and blotting out the Milky Way. In a moment the red glare from the headlight streamed up the snow-covered track before the siding and glittered on the wet, black rails. The burly man with the disheveled red beard walked swiftly up the platform toward the approaching train, uncovering his head as he went. The group of men behind him hesitated, glanced questioningly at one another, and awkwardly followed his example. The train stopped, and the crowd shuffled up to the express car just as the door was thrown open, the spare man in the G.A.R. suit thrusting his head forward with curiosity. The express messenger appeared in the doorway, accompanied by a young man in a long ulster and traveling cap.

"Are Mr. Merrick's friends here?" inquired the young man.

The group on the platform swayed and shuffled uneasily. Philip Phelps, the banker, responded with dignity: "We have come to take

charge of the body. Mr. Merrick's father is very feeble and can't be about."

"Send the agent out here," growled the express messenger, "and tell the operator to lend a hand."

The coffin was got out of its rough box and down on the snowy platform. The townspeople drew back enough to make room for it and then formed a close semicircle about it, looking curiously at the palm leaf which lay across the black cover. No one said anything. The baggage man stood by his truck, waiting to get at the trunks. The engine panted heavily, and the fireman dodged in and out among the wheels with his yellow torch and long oil-can, snapping the spindle boxes. The young Bostonian, one of the dead sculptor's pupils who had come with the body, looked about him, helplessly. He turned to the banker, the only one of that black, uneasy, stoop-shouldered group who seemed enough of an individual to be addressed.

"None of Mr. Merrick's brothers are here?" he asked uncertainly.

The man with the red beard for the first time stepped up and joined the group. "No, they have not come yet; the family is scattered. The body will be taken directly to the house." He stooped and took hold of one of the handles of the coffin.

"Take the long hill road up, Thompson--it will be easier on the horses," called the liveryman as the undertaker snapped the door of the hearse and prepared to mount to the driver's seat.

POST-TEST 2

Liam O'Flaherty

"The Hawk"

It was a lordly place, at the apex of a narrow cove, and so high above the sea that the roar of the breaking waves reached there only as a gentle murmur. There was no other sound within the semicircle of towering limestone walls that rose sheer from the dark water. Two months before, a vast crowd of other birds had lived on the lower edges of the cliffs, making the cove merry with their cries as they flew out to sea and back again with fish. Then one morning the two young hawks came there from the east to mate.

For hours the rockbirds watched them in terror, as the interlopers courted in the air above the cove, stooping past each other from the clouds down to the sea's edge, and then circling up again, wing to wing, winding their garland of love. At noon they saw the female draw the male into a cave, and heard his mating screech as he treaded her. Then they knew the birds of death had come to nest in their cove. So they took flight. That afternoon the mated hawks gamboled in the solitude that was now their domain, and at sundown the triumphant male brought his mate to nest on this lofty ledge, from which a pair of ravens had fled.

Now, as he dropped the dead lark beside her on the ledge, she lay there in a swoon of motherhood. Her beak rested on one of the sticks that formed her rude bed, and she looked down at the distant sea through half-closed eyes. Uttering cries of tenderness, he trailed his wings and marched around the nest on his bandy legs, pushing against

her sides, caressing her back with his throat, and gently pecking at her crest. He had circled her four times, before she awoke from her stupor. Then she raised her head suddenly, opened her beak, and screamed. He screamed in answer and leaped upon the carcass of the lark. Quickly he severed its head, plucked its feathers, and offered her the naked, warm meat. She opened her mouth wide, swallowed the huge morsel in one movement, and again rested her beak on the stick. Her limp body spread out once more around the pregnant eggs, as she relapsed into her swoon.

His brute soul was exalted by the consciousness that he had achieved the fullness of the purpose for which nature had endowed him. Like a hound stretched out in sleep before a blazing fire, dreaming of the day's long chase, he relived the epic of his mating passion, while he strutted back and forth among the disgorged pellets and the bloody remains of eaten prey with which the rock was strewn.

Once he went to the brink of the ledge, flapped his wings against his breast, and screamed in triumph, as he looked out over the majestic domain that he had conquered with his mate. Then again he continued to march, rolling from side to side in ecstasy, as he recalled his moments of tender possession and the beautiful eggs that were warm among the sticks.

VITA

3
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