

APPROVAL SHEET

Title of Thesis: AN EXAMINATION OF THE EFFECTS OF THREE TESTING
TECHNIQUES ON WORD ACCURACY, COMPREHENSION, RATE, AND
PERCENTAGES OF SEMANTIC SUBSTITUTIONS IN ORAL READING

Name of Candidate: Gerald Edward Stafford
Doctor of Philosophy, 1972

Thesis and Abstract Approved:

Dorothy D. Sullivan

Dorothy D. Sullivan
Associate Professor of Education
Department of Early Childhood-
Elementary Education

Date Approved: July 19, 1972

ABSTRACT

Title of Thesis: AN EXAMINATION OF THE EFFECTS OF THREE TESTING TECHNIQUES ON WORD ACCURACY, COMPREHENSION, RATE, AND PERCENTAGES OF SEMANTIC SUBSTITUTIONS IN ORAL READING

Gerald E. Stafford, Doctor of Philosophy, 1972

Thesis directed by: Dr. Dorothy D. Sullivan

Authoritative opinion of long standing has recommended that purposes for reading be established prior to reading. In spite of such recommendations, testing procedures for oral reading typically have not involved reading for purposes. Furthermore, research designed to examine the effectiveness of reading for purposes has generally produced divergent findings. Superior reading performance has been observed when purposes for reading were established prior to reading as well as when they were not established prior to reading. Moreover, research designed to examine the effectiveness of purposeful reading has been confined almost exclusively to the area of silent reading. To date not a single investigation has been found which clearly illustrated the effects of purposes for reading on oral reading performance.

The present study was designed to investigate the relationships between three testing techniques and performance on four dimensions of oral reading performance. The three testing techniques employed in this study were identified as (1) careful reading, (2) reading for specific purposes, and (3) reading for general purposes. The four dimensions of oral reading performance on which comparisons were made involved oral reading word accuracy, comprehension, rate, and the percentages of semantic substitutions.

The four research hypotheses examined in the investigation are stated as follows:

1. There is a difference in oral reading word accuracy under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth graders.
2. There is a difference in oral reading comprehension under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth graders.
3. There is a difference in oral reading rate under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth graders.
4. There is a difference in the percentages of semantic substitutions made under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth graders.

To obtain data for this study, forty-five third grade and forty-five sixth grade subjects were randomly selected from two elementary schools. The ninety subjects chosen for the study were then randomly assigned to one of three treatment groups. Each subject was requested to read orally in the manner dictated by the treatment group to which he had been assigned. The materials from which subjects read were the appropriate passages from Form A of the Gilmore Oral Reading Test (1952).

Measurements for oral reading word accuracy, comprehension, rate, and percentages of semantic substitutions were computed for each subject. A 2 x 3 analysis of variance design was used to test for differential treatment effects. An analysis of the data from the study indicated that none of the research hypotheses was supported at the .05 level of significance.

The present study led to recommendations in the areas of theory, diagnosis, teaching, and research. Authoritative opinion has suggested that many of the classification schemes used for analyzing oral reading errors are atheoretical. It is possible that performance differences not evidenced through the classification scheme employed in this study could be found using a classification scheme having a sounder theoretical basis. It was therefore recommended that the effects of the three treatments employed in this study be reexamined using a classification scheme built around a theory of reading.

In contrast to investigation in the area of silent reading, the present study did not evidence differences in reading performance under the treatments employed. The failure of oral reading performance to vary in the manner observed for silent reading suggested that the two forms of reading are in some respects dissimilar. It was therefore recommended that diagnostic procedures include measures of both oral and silent reading.

Recent investigation has suggested that children often need greater skill in reading for different purposes. One possible explanation for why differential treatment effects were not obtained in the present study was that subjects did not have skill in reading for different purposes. The recommendation was made, therefore, that classroom teachers place greater emphasis on teaching children to read for different purposes.

The following recommendations were made for the area of research.

- (1) It was recommended that research be undertaken to develop measures of oral reading comprehension, rate, and percentages of semantic substitutions which have greater test-retest reliability.
- (2) The sample

chosen for this study was restricted to third and sixth graders whose performance on a standardized silent reading test placed them in the second or third quartile of the normative population. A replication of this study using subjects from other grade and performance levels was recommended. (3) It was recommended that investigation be undertaken to further examine the relationships between oral and silent reading. Special consideration should be given to identifying those factors in which a satisfactory generalization from oral reading to silent reading can be made. (4) This study did not evidence differential treatment effects using reading materials and purposes for reading supplied by an examiner. It was recommended that investigation be undertaken to examine the effectiveness of using pupil-selected materials and pupil purposes for reading.

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TABLE OF CONTENTS

Chapter	Page
ACKNOWLEDGEMENTS	ii
LIST OF TABLES	vi
I. INTRODUCTION	1
A. RATIONALE AND BACKGROUND	1
B. NEED FOR THE STUDY	9
C. STATEMENT OF THE PROBLEM AND HYPOTHESES	9
D. DEFINITIONS	10
E. OVERVIEW OF THE DESIGN	15
F. DELIMITATIONS	17
G. SUMMARY	17
II. REVIEW OF THE LITERATURE	20
A. INVESTIGATIONS WHICH EXAMINED THE RELATIONSHIPS BETWEEN ORAL AND SILENT READING	20
1. Eye-Movement Investigations	20
2. Comprehension, Rate, and Perceptual Accuracy	25
3. Inner Speech	29
B. INVESTIGATIONS WHICH EXAMINED THE EFFECTS OF PURPOSES FOR READING ON READING PERFORMANCE	36
1. Oral Reading Investigation	36
2. Silent Reading Investigation	37
a. Non test-specific content	42
b. Advance organizers	46
3. Purposes for Reading and Rate of Reading	48

4. Purposes for Reading and Eye-Movements	51
C. INVESTIGATIONS WHICH EXAMINED THE RELATIONSHIPS BETWEEN READING COMPREHENSION AND ORAL READING WORD ACCURACY	55
1. Word Accuracy and Reading Proficiency	56
2. Word Accuracy and Other Measures of Reading Performance	57
D. INVESTIGATIONS DEALING WITH THE RELATIONSHIPS BETWEEN READING COMPREHENSION AND THE SUBSTITUTION ERROR	60
E. SUMMARY	64
III. PROCEDURES FOR THE STUDY	67
A. SELECTION AND DESCRIPTION OF THE SAMPLE	67
B. TESTING TECHNIQUES	69
Development of Specific and General Purposes for Reading	72
C. COLLECTION OF THE DATA	73
D. INSTRUMENTATION	74
1. <u>Iowa Test of Basic Skills</u>	74
2. <u>Gilmore Oral Reading Test</u>	76
E. ANALYSIS OF THE DATA	80
F. RELIABILITY	84
1. Stability Over Time	84
2. Inter-Rater Reliability	84
G. SUMMARY	85
IV. FINDINGS	87
A. ORAL READING WORD ACCURACY	88
B. ORAL READING COMPREHENSION	90
C. ORAL READING RATE	92

Chapter	Page
D. PERCENTAGES OF SEMANTIC SUBSTITUTIONS	94
E. STABILITY OVER TIME	96
F. INTER-RATER RELIABILITY	101
1. Word Accuracy, Comprehension, Rate, Percentages of Semantic Substitutions	101
2. Semantic Substitutions	103
G. SUMMARY	103
V. SUMMARY AND RECOMMENDATIONS	105
A. OVERVIEW OF THE DESIGN	106
B. SUMMARY OF FINDINGS	108
C. CONCLUSIONS	108
D. DISCUSSION	109
E. RECOMMENDATION FOR THEORY	117
F. RECOMMENDATION FOR DIAGNOSIS	117
G. RECOMMENDATION FOR TEACHING	118
H. RECOMMENDATIONS FOR RESEARCH	118
APPENDIX A: SUPPLEMENTARY TABLES	120
APPENDIX B: SAMPLE CHECKLIST FOR IDENTIFYING SPECIFIC AND GENERAL PURPOSES TO BE INCLUDED IN THE STUDY	133
APPENDIX C: SUMMARY OF PANEL MEMBERS' RATINGS FROM CHECKLIST	148
SELECTED BIBLIOGRAPHY	154

LIST OF TABLES

Table	Page
I. Group Means, Standard Deviations, and Analysis of Variance Summary Table for Subjects' Performance on the Comprehension Subtest of the <u>Iowa Test of Basic Skills</u>	70
II. Correlations Between Performance on the <u>Iowa Test of Basic Skills</u> and Measures of Scholastic Achievement	76
III. Correlations Between Performance on the <u>Iowa Test of Basic Skills</u> and Measures of Scholastic Achievement	77
IV. Correlations Between the <u>Gilmore Oral Reading Test, Form A</u> , and Two Oral Reading Tests	79
V. Reliability Data for the <u>Gilmore Oral Reading Test</u>	80
VI. Group Means and Analysis of Variance Summary Table for Oral Reading Word Accuracy	89
VII. Group Means and Analysis of Variance Summary Table for Oral Reading Comprehension	91
VIII. Group Means and Analysis of Variance Summary Table for Oral Reading Rate	93
IX. Group Means and Analysis of Variance Summary Table for Percentages of Semantic Substitutions	95
X. Correlations of Original Test Data with Retest Data for Oral Reading Word Accuracy, Comprehension, Rate, and Percentages of Semantic Substitutions	99
XI. Correlations of Original Test Data with Retest Data for Oral Reading Word Accuracy, Comprehension, Rate, and Percentages of Semantic Substitutions	100
XII. Inter-Rater Correlations for Oral Reading Word Accuracy, Comprehension, Rate, and Percentages of Semantic Substitutions	102
XIII. Data for Subjects' Performance on the Comprehension Subtest of the <u>Iowa Test of Basic Skills</u>	121

Table	Page
XIV. Original Test Data for Oral Reading Word Accuracy, Comprehension, Rate, and Percentages of Semantic Substitutions for Subjects in Grade 3	122
XV. Original Test Data for Oral Reading Word Accuracy, Comprehension, Rate, and Percentages of Semantic Substitutions for Subjects in Grade 6	124
XVI. Retest Data for Oral Reading Word Accuracy, Comprehension, Rate, and Percentages of Semantic Substitutions for Third and Sixth Grade Subjects	126
XVII. Scores Obtained by Independent Rater for Inter-Rater Reliability for Third Grade Subjects	128
XVIII. Scores Obtained by Independent Rater for Inter-Rater Reliability for Sixth Grade Subjects	129
XIX. Original Data (A) and Inter-Rater Data (B) for Agreement on Substitutions Identified as Being Semantic	130

CHAPTER I

INTRODUCTION

The age in which we are presently living is one characterized by pervasive knowledge. Professional educators and the lay public alike recognize that access to much of this knowledge can be gained for both pleasure and instruction through the act of reading. As suggested by Bond and Tinker:

The ability to read well constitutes one of the most valuable skills a person can acquire. . . . It is difficult to discover any activity, whether in school or in the home, on the farm, in business, in the professions, and even in recreational pursuits, that does not demand some, and often considerable, reading. In many situations, reading constitutes the indispensable channel of communication with an ever-widening world.¹

To facilitate the use of this invaluable avenue to knowledge, it is necessary that students be instructed in a manner which will permit optimal development of reading skills. Educators concerned with providing instruction of this nature must have at their disposal an accurate knowledge of individual pupil performance as well as an accurate knowledge of the reading process.²

RATIONALE AND BACKGROUND

Data from performance in oral reading are frequently used by classroom teachers and reading clinicians for diagnosing individual

¹Guy L. Bond and Miles A. Tinker, Reading Difficulties: Their Diagnosis and Correction (2nd ed.; New York: Appleton-Century-Crofts, 1967), p. 4.

²Robert M. Wilson, Diagnostic and Remedial Reading for Classroom and Clinic (Columbus, Ohio: Charles E. Merrill Pub. Co., 1967), pp. vi, 15.

reading needs³ and by reading researchers for providing insight into the reading process.⁴ These data are often obtained through the administration of oral reading tests. Current oral reading test procedures often require examinees to read a series of passages and to answer questions presented at the conclusion of reading each passage. Prior to reading subjects are sometimes admonished to read carefully and told that questions will be asked at the conclusion of reading (careful reading).⁵ The practice of presenting questions only at the conclusion of reading is not in keeping with the educational practice advocated by many authorities in reading. Such authorities recommended that purpose for reading be established prior to reading.⁶ The rationale for a practice such as this is given by Stauffer, who indicated that "Regulating reading by purposes--by questions to be answered--sets up a perplexity that demands a solution."⁷ Stauffer further pointed out that "... purposes or questions or set represent the directional and motivational influences

³Bond and Tinker, op. cit., pp. 232-233; see also Ruth Strang, Diagnostic Teaching of Reading (2nd ed.; New York: McGraw-Hill Book Co., 1969), pp. 67-78.

⁴Kenneth S. Goodman, "Analysis of Oral Reading Miscues; Applied Psycholinguistics," Reading Research Quarterly, V, 1 (Fall, 1969), 9-30; see also Joanne R. Nurss, "Oral Reading Errors and Reading Comprehension," The Reading Teacher, XXII, 6 (March, 1969), 523-527.

⁵John V. Gilmore, Gilmore Oral Reading Test: Manual of Directions (New York: Harcourt, Brace and World, 1952), p. 7; see also William S. Gray, Gray Oral Reading Tests: Manual of Directions (Boston: Bobbs, Merrill Co., 1967), p. 10.

⁶Emerald V. Dechant, Improving the Teaching of Reading (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1964), pp. 354-355; see also David H. Russell, Children Learn to Read (2nd ed.; Boston: Ginn and Co., 1961), p. 326; see also Russell G. Stauffer, Teaching Reading as a Thinking Process (New York: Harper and Row, 1969), pp. 24-25.

⁷Russell G. Stauffer, Directing Reading Maturity as a Cognitive Process (New York: Harper and Row, 1969), p. 26.

that get a reader started, keep him on course, and produce the vigor and potency and push to carry him through to the end."⁸

In spite of the recommendations made and the rationale provided, research designed to examine the effectiveness of reading for purposes has generally produced divergent findings. Superior reading performance has been observed under conditions in which purposes for reading were established prior to reading⁹ as well as under conditions in which purposes for reading were not established prior to reading.¹⁰ Furthermore, it is not at all certain that different types of purposes are equally effective. Betts, in discussing the use of oral reading in the Informal Reading Inventory, suggested that ". . . reading . . . be done in response to a general motive question. . . ." ¹¹ However, a common classroom practice in the use of the directed reading activity is to have pupils read in response to specific purposes.¹²

Research designed to examine the effectiveness of reading for different types of purposes has also produced divergent findings. Superior reading performance has been observed when subjects read for

⁸Stauffer, Teaching Reading as a Thinking Process, p. 24.

⁹Eleanor Holmes, "Reading Guided by Questions Versus Careful Reading and Re-Reading Without Questions," The School Review, XXXIX, 5 (May, 1931), 361-371.

¹⁰Charles E. Goudy, "Reading--Directed or Not?" The Elementary School Journal, LXX, 5 (February, 1970), 245-247.

¹¹Emmett Albert Betts, Foundations of Reading Instruction (New York: American Book Co., 1957), p. 457.

¹²Jane L. Davidson, "The Relationship Between Teachers' Questions and Pupils' Responses During a Directed Reading Activity and a Directed Reading-Thinking Activity" (unpublished Doctor's dissertation, University of Michigan, 1970).

specific purposes as well as when subjects read for general purposes. In addition, in more recent investigations, Frase found that subjects reading for given purposes often comprehended materials related to such purposes (test-specific content) but failed to comprehend materials not related to such purposes (non test-specific content).¹³ On the other hand, the researcher observed that subjects admonished to read carefully and told that questions would be asked at the conclusion of reading (careful reading) demonstrated better over-all comprehension than did subjects reading for general or specific purposes.

Precisely why reading performance under the conditions of careful reading, reading for specific purposes or reading for general purposes should differ is the subject of much discussion. One explanation of differential treatment effects was provided by Frase in his discussion of the superior reading performance observed under careful reading conditions. Frase contended that this superior performance in general comprehension occurred because of a higher rate of reinforcement. As suggested by Frase, finding an answer to a question when reading carries with it a certain amount of reinforcement. Such reinforcement was accompanied by an increase in attentive behaviors and a subsequent increase in the learning of the content related to the question. The degree of attentiveness and the amount of learning which takes place, it was suggested, could depend on the opportunities for reinforcement found in the prequestion. That is, if one is reading to answer a very specific question, there may be very limited opportunity for reinforcement which

¹³Lawrence T. Frase, "Questions as Aids to Reading: Some Research and a Theory," Final Report, 1967, Project Number RE-000222 (Washington, D.C.: United States Department of Health, Education, and Welfare, Office of Education), pp. 1-13.

may result in a diminished attentiveness and perhaps in a lessening of learning. If one is reading to answer a comparative question (a question involving a comparison of two factors), there should be an opportunity for two reinforcements and hence an opportunity for greater learning. It was suggested, then, that the larger the number of content-related factors found in a prequestion, the greater the opportunity for reinforcement. Conversely, the lower the number of content-related factors found in a prequestion, the less opportunity there is for reinforcement and the lower will be the comprehension.

Frase suggested that the superiority in general comprehension observed under careful reading conditions occurred because the questions at the end of one passage served as a general test-taking orientation for the subsequent passages. Such questions, being irrelevant to the succeeding passage did not permit reinforcement to operate in the manner previously indicated. The reason for this is that one will not be able to find the correct answer in order to be reinforced. What is reinforced, however, is the subject's predisposition to read for specific information. In reading for specific information instead of for a specific answer, every fact read, Frase hypothesized, was reinforced. This resulted in one's being better able to answer the questions at the end of a given passage and in the consequent reinforcement for this type of reading. Frase's theory suggested that reading performance will best be facilitated through careful reading in which questions are asked only at the end of a passage. However, in his concluding remarks, Frase advanced the position that "The most facilitating pre-questions would be the questions which have the largest number of associates within

the passage."¹⁴ Such a statement implied the possible effectiveness of purposes for reading which are general in nature.

Additional support for the possible effectiveness of general purposes for reading was provided by Ausubel. In his discussion of advance organizers, Ausubel suggested that "... introductory material [material presented prior to reading] at a high level of abstraction, generality, and inclusiveness (advance organizers) facilitates meaningful verbal learning and retention."¹⁵ He further pointed out that "By deliberately introducing relevant and appropriately inclusive subsuming concepts (advance organizers) . . . one provides helpful ideational scaffolding which enhances the . . . [learning and retention] of the more detailed material in the . . . passage."¹⁶ It is logical to suggest that general purposes for reading which are in many respects similar to advance organizers will perform a function similar to that hypothesized for the advance organizer. Simply stated, Ausubel's position on advance organizers appeared to support the possible effectiveness of purposes for reading which are general in nature.

Yet another explanation of differential treatment effects was found in the "cybernetic" approach to learning. In discussing the active individual as a feedback control system, Smith and Smith suggested that one "... generates a course of action and then redirects or cor-

¹⁴Ibid., p. 10.

¹⁵David P. Ausubel and Donald Fitzgerald, "The Role of Discriminability in Meaningful Verbal Learning and Retention," Journal of Educational Psychology, LII, 5 (August, 1961), 266-274.

¹⁶Ibid., p. 264.

rects that action by means of feedback information."¹⁷ More specifically, the cybernetic approach suggested that purposes established prior to reading may serve as criteria whereby one using dynamic feedback information (sensory feedback which is received as one is reading, as opposed to subsequent knowledge of results), judges the correctness of his reading. If negative feedback is received, i.e., if an error is detected, a necessary adjustment or correction could be made. The consequences of such an adjustment, it is logical to suggest, should be enhanced reading performance.

Much of the discussion and research dealing with the effects of purposes on reading performance has been concerned with the area of reading comprehension. There are also data which suggested that reading rate may vary with one's purpose for reading. Reading rate is often described as the speed at which one comprehends a written message or rather as the rate of comprehension.¹⁸ In discussing this position, Tinker suggested that an important determinant of rate of comprehension is the purpose for which the reading is done.¹⁹ The point has been made that performance in reading comprehension may vary with the purpose for reading. It is also logical to suggest that if one is reading to comprehend, and if the requirements for comprehension differ through different purposes, the rate at which one reads may differ as well.

¹⁷K. V. Smith and M. F. Smith, Cybernetic Principles of Learning and Educational Design (New York: Holt, Rinehart and Winston, 1966), p. 203.

¹⁸Dechant, Improving the Teaching of Reading, pp. 218-220.

¹⁹Miles A. Tinker, Teaching Elementary Reading (2nd ed.; New York: Appleton-Century-Crofts, Inc., 1962), p. 217.

Additional data suggested that performance in oral reading word accuracy may differ with the purpose one has for reading. In an early investigation, Fairbanks found that poor readers averaged 5.8 oral reading errors per 100 words while good readers reading the same materials averaged only 2.1 oral reading errors per 100 words.²⁰ More recently Goodman found an increase in the number of oral reading errors (miscues) to be associated with a decrease in comprehension.²¹ If, as previously suggested, performance in reading comprehension differs with one's purpose for reading, and if oral reading word accuracy varies with one's comprehension of a passage, it is logical to suggest that one's oral reading word accuracy will also differ with one's purpose for reading.

In a similar fashion it can be suggested that the type of errors one makes while reading orally may vary with the purpose for which one is reading. As suggested by Weber, "An error that conforms to preceding context can be taken to reflect that the reader has grasped the story."²² One oral reading error which may indicate that the reader has grasped the meaning of a story is the substitution which represents the same idea as the stimulus word.²³ That this may be so was suggested in an

²⁰Grant Fairbanks, "The Relation Between Eye-Movement and Voice in the Oral Reading of Good and Poor Silent Readers," Psychological Monographs, XLVIII, 3 (1937), 78-107.

²¹Kenneth S. Goodman, "A Study of Oral Reading Miscues that Result in Grammatical Re-Transformations," Final Report, June, 1969, Project Number 7-E-219 (Washington, D.C.: United States Department of Health, Education, and Welfare, Office of Education), p. 28.

²²Rose-Marie Weber, "A Linguistic Analysis of First-Grade Reading Errors," Reading Research Quarterly, V, 3 (Spring, 1970), 449.

²³George D. Spache and Evelyn B. Spache, Reading in the Elementary School (2nd ed.; Boston: Allyn and Bacon, 1969), p. 339.

early study by Fairbanks.²⁴ In comparing the oral reading performance of poor and good readers, it was noted that 51% of the substitutions made by poor readers seriously affected meaning, while none of the substitutions made by good readers seriously affected meaning. It is logical to suggest that, if one's comprehension or grasp of a story varies with the purpose for reading, the percentages of substitutions which are semantic will also vary with the purpose for reading.

NEED FOR THE STUDY

Research designed to investigate the effectiveness of purposes for reading has been addressed almost exclusively to silent reading. Of the many studies examined, not one has been found which clearly illustrated the effects of purposes for reading on oral reading performance. The effects of purposeful reading on the oral reading dimensions of word accuracy, reading comprehension, reading rate, and percentages of semantic substitutions are uncertain and have yet to be demonstrated.

STATEMENT OF THE PROBLEM AND HYPOTHESES

The demands placed on oral reading tests as instruments for diagnosing individual reading needs and as instruments used in reading research suggest that they be administered under conditions which permit optimal use of reading skills. Whether or not optimal use of reading skills is being facilitated under current oral reading testing procedures is uncertain. The problem from which such an uncertain condition stems is seen in the contradiction between recommended instructional practices

²⁴Fairbanks, op. cit., pp. 93-94.

and present oral reading testing procedures, in the inconclusiveness of related silent reading investigation, and in the absence of related oral reading investigation. The present study is designed to provide data which shed some light on this problem.

To this end the following hypotheses are considered:

1. There is a difference in oral reading word accuracy under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects.
2. There is a difference in oral reading comprehension under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects.
3. There is a difference in oral reading rate under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects.
4. There is a difference in the percentages of semantic substitutions made under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects.

DEFINITIONS

The following definitions are provided to assist in the understanding of this study.

1. Basal level

the level or paragraph "... at which the pupil makes no more than two [oral reading] errors on a paragraph."²⁵

²⁵Gilmore, Gilmore Oral Reading Test: Manual of Directions, p. 7.

2. Careful reading (Treatment 1)

reading in which the examinee is admonished to read carefully and is told that questions will be asked at the conclusion of each passage read.

Example:

"Read carefully, for when you have finished each story, I am going to ask you questions about it."²⁶

3. General purposes for reading (Treatment 3)

The general purposes for reading are designed so as to request the examinee to read for the main idea or central theme of a passage. Such purposes conform closely to what Bloom refers to as 2.20 Interpretation. The reader must

. . . go beyond . . . [translating each of the major parts] of the communication to comprehend the relationships between its various parts, to reorder, or to rearrange it in his mind so as to secure some total view of what the communication contains and to relate it to his own fund of experience and ideas. Interpretation also includes competence in recognizing the essentials and differentiating them from the less essential portions or from the relatively irrelevant aspects of the communication. . . .

The essential behavior in interpretation is that when given a communication the student can identify and comprehend the major ideas which are included in it as well as understand their interrelationships.²⁷

Furthermore, the general purposes provided are designed to relate to content specifically mentioned in the passage and to relate to at least three of the five questions used in the comprehension evaluation.

²⁶Ibid.

²⁷Benjamin S. Bloom, ed., Taxonomy of Educational Objectives, Handbook 1, Cognitive Domain (New York: David McKay Co., Inc., 1956), p. 93.

4. Oral reading comprehension

a grade placement score which has been derived from the number of correct responses made to questions at the end of individual paragraphs which have been read orally.

5. Oral reading errors

SUBSTITUTIONS

A sensible or real word substituted for the word in the paragraph.

MISPRONUNCIATIONS

A nonsense word which may be produced by (1) false accentuation; (1) wrong pronunciation of vowels or consonants; or (3) omission, addition, or insertion of one or more letters.

WORDS PRONOUNCED BY EXAMINER

A word on which subject hesitates for 5 seconds. (The word is then pronounced by the examiner.)

DISREGARD OF PUNCTUATION

Failure to observe punctuation.

INSERTIONS (including Additions)

A word (or words) inserted at the beginning, in the middle, or at the end of a sentence or line of text.

HESITATIONS

A pause of at least 2 seconds before pronouncing a word.

REPETITIONS

A word, part of a word, or group of words repeated.

OMISSIONS

One or more words omitted. (If a complete line is omitted, this is counted as one omission error.)²⁸

6. Oral reading rate

the average number of words read per minute. This is determined by computing the number of words read in each passage as well as the time taken in seconds to read each passage. The number of words read is divided by the time in seconds. This figure is then multiplied by 60.

²⁸Gilmore, op. cit., pp. 8, 9.

7. Oral reading word accuracy

a grade placement score which has been derived from the total number of oral reading errors made at each level in the reading of a series of passages.

8. Purposes for reading

reading tasks which are supplied by an examiner prior to a subject's reading of each paragraph. Such tasks require the examinee to read a given passage to find information related to the task.

Examples:

1. Read to find out what animal the boy has.
2. Read to find out who is in the family.

9. Semantic substitutions

substitutions which represent the same part of speech as the stimulus word and which are consistent with the meaning of the passage.

Examples:

1. The men climbed the ^{big}~~large~~ hill.
2. The stream ran ^{swiftly}~~quickly~~ to the sea.
3. She ^{grabbed}~~seized~~ the man when he tried to run.

10. Specific purposes for reading (Treatment 2)

The specific purposes considered were designed to request the examinee to read at a literal level of understanding to find specific answers. Such purposes involved reading for what Bloom referred to as 1:00 Knowledge.

Knowledge as defined here includes those behaviors and test situations which emphasize the remembering, either by recognition or recall, of ideas, material, or phenomena. . . . In the learning situation the student is expected to store

in his mind certain information and the behavior expected later is the remembering of this information. Although some alterations may be expected in the material to be remembered, this is a relatively minor part of the behavior. . . .²⁹

More specifically, the purpose for reading presently considered conforms closely with reading for 1.12 Knowledge of Specific Facts, i.e., "Knowledge of dates, events, persons, places, etc.--This may include very precise and specific information, such as the exact date of an event or the exact magnitude of a phenomenon."³⁰

While it is recognized that knowledge is involved in the more complex major categories of the taxonomy . . . the knowledge category differs from the others in that remembering is the major psychological process involved here. . . .³¹

Furthermore, each such purpose is constructed so as to relate to an item specifically mentioned in the passage and to relate to one of the questions used in the comprehension evaluation. Also, of the two purposes used, one has been derived from the initial portion of the passage, the other from the latter portion of the passage.

11. Testing techniques

the three experimental treatments in the present study under which oral reading performance data were gathered and compared. The three testing techniques are

1. Careful reading;
2. Reading for specific purposes;
3. Reading for general purposes.

²⁹Bloom, Taxonomy of Educational Objectives, p. 62.

³⁰Ibid., p. 65.

³¹Ibid., p. 62.

OVERVIEW OF THE DESIGN

To obtain data for this study, forty-five third and forty-five sixth grade subjects were randomly selected from two elementary schools. Each subject was then randomly assigned to one of three groups and each group was randomly assigned one of the three testing techniques used in the study. Data from the Comprehension subtests of the Iowa Test of Basic Skills, which had been administered seven months prior to the study, were analyzed to assure that there were no significant differences in reading performance between the three groups. A one-way analysis of variance at the .05 level of significance was used to make this analysis.³²

Group one in the study was assigned the testing technique identified as "Careful Reading". Subjects assigned this technique were requested to read orally in the manner suggested by the Gilmore Oral Reading Test: Manual of Directions.³³ The directions found in the manual admonished the subject to read carefully and cautioned him that questions would be asked at the end of each individual passage. Group two was assigned the testing technique identified as "Reading for Specific Purposes". Subjects in this group were requested to read each individual passage for two specific purposes supplied orally by the examiner. The third group was assigned the testing technique identified as "Reading for General Purposes". Subjects in this group were requested to read each individual passage for a general purpose supplied orally by the examiner. During the reading of each individual passage, subjects'

³²Allen L. Edwards, Statistical Methods (2nd ed.; New York: Holt, Rinehart and Winston, 1967), pp. 257-273.

³³Gilmore, Gilmore Oral Reading Test: Manual of Directions, p. 7.

performance in oral reading word accuracy, oral reading rate, and percentages of semantic substitutions were noted and recorded. At the conclusion of reading each individual passage, subjects were asked a series of questions related to the passage. The accuracy with which subjects answered the questions was noted and recorded.

Three weeks after the initial testing, thirty-five randomly selected subjects were retested. The data from the second administration were correlated with performance data from the original administration to obtain coefficients of stability.

To obtain measures of inter-rater reliability on test performance the audio tapes of a randomly selected group of subjects were reexamined by two independent raters. The two raters computed measures of subjects' oral reading word accuracy, comprehension, rate, and percentages of semantic substitutions. The oral reading measures obtained by the two independent raters were correlated with those obtained by the original rater.

Measures of inter-rater reliability were also computed to determine agreement on substitutions identified as being semantic. To determine such agreement the substitution records of a randomly selected group of subjects were reexamined by two independent raters. The substitutions identified as being semantic or nonsemantic by the original rater were correlated with those identified as being semantic or nonsemantic by the two independent raters.

A 2 x 3 analysis of variance design was used to determine if there were differential treatment effects for the oral reading dimensions considered as well as to note interaction between treatment effects and grade level. The .05 level of significance was chosen for this analysis.

DELIMITATIONS

1. The findings of this study are limited to the population of third and sixth grade students in the Pershing Hill and Jessup Elementary Schools, Anne Arundel County, Maryland.

2. The findings of this study are limited to the population of students identified as not being mentally defective or having speech impediments, and as indicating performance between the second and third quartile on a standardized silent reading test.

3. The dimensions of oral reading performance examined in this study are limited to oral reading word accuracy, comprehension, rate, and semantic substitutions as these dimensions are measured by Form A of the Gilmore Oral Reading Test.³⁴

4. Purposes for reading are limited in this study to purposes which were supplied orally by the examiner.

SUMMARY

The age in which we are presently living is characterized by pervasive knowledge. Access to much of this knowledge can be gained through the act of reading. To facilitate optimal development of reading skills, it is imperative that those concerned have accurate knowledge of individual pupil performance and accurate knowledge of the reading process. Knowledge of this nature is frequently obtained through the administration of oral reading tests.

The demands placed on oral reading tests suggest that they be administered under conditions which will permit optimal use of reading

³⁴John V. Gilmore, Gilmore Oral Reading Test, Form A (New York: Harcourt, Brace and World, Inc., 1951).

skills. Authoritative opinion of long standing has suggested that establishing purposes for reading prior to reading will enhance reading performance. The rationale for such a practice as presented by Stauffer indicated that "Regulating reading by purposes--by questions to be answered--sets up a perplexity that demands a solution."³⁵ Stauffer further pointed out that ". . . purposes or questions or set represent the directional and motivational influences that get a reader started, keep him on course, and produce the vigor and potency to carry him through to the end."³⁶ In spite of the recommendations made and the rationale provided, current oral reading testing procedures often present questions to be answered only at the conclusion of reading.

Research designed to investigate the effectiveness of reading for purposes has produced divergent findings. Superior reading performance has been observed under conditions in which purposes were established prior to reading³⁷ as well as under conditions in which questions were presented only at the conclusion of reading.³⁸

Moreover, authoritative opinion has advanced the position that reading should be done in response to a general purpose. A common classroom practice, however, has been for students to read in response to specific purposes. Recent investigations comparing the effectiveness of general and specific purposes have produced divergent findings.

³⁵Stauffer, Directing Reading Maturity as a Cognitive Process, p. 26.

³⁶Stauffer, Teaching Reading as a Thinking Process, p. 24.

³⁷Holmes, "Reading Guided by Questions," pp. 361-372.

³⁸Goudy, "Reading--Directed or Not?" pp. 245-247.

In addition, recent investigation has found that subjects instructed to read carefully and told that questions would be asked at the conclusion of reading demonstrated better over-all comprehension than did subjects reading for specific or general purposes.³⁹

Research designed to investigate the effectiveness of purposes for reading has been confined almost exclusively to the area of silent reading. To date not a single investigation has been found which clearly illustrated the effects of purposes for reading on oral reading performance. The present study was designed to investigate the effects of three different treatment conditions on oral reading performance. To this end the following hypotheses were considered:

1. There is a difference in oral reading word accuracy under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects.
2. There is a difference in oral reading comprehension under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects.
3. There is a difference in oral reading rate under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects.
4. There is a difference in the percentages of semantic substitutions made under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects.

³⁹Frase, "Questions as Aids to Reading," pp. 1-13.

CHAPTER II

REVIEW OF THE LITERATURE

The investigations reviewed in Chapter II were addressed to the following major areas: the relationships between oral and silent reading; the effects of purposes for reading on reading performance; the relationships between reading comprehension and oral reading word accuracy; and the relationships between reading comprehension and the substitution error.

INVESTIGATIONS WHICH EXAMINED THE RELATIONSHIPS BETWEEN ORAL AND SILENT READING

The present study has advanced the position that performance in oral reading will differ with the purpose one has for reading. The rationale for such a position was derived from investigation in the area of silent reading. The accuracy with which this rationale applies to oral reading is uncertain. A review of the literature which examined the relationships between oral and silent reading should cast some light on this uncertain condition.

Eye-movement Investigations

Investigations which have examined the eye-movement of both oral and silent reading have provided some insight into the relationships between these two forms of reading. The rationale for using investigations of this nature for noting the relationships between oral and silent reading was provided by Anderson and Swanson:

. . . the degree to which the eye-movements in silent and oral reading are correlated will indicate the similarity of the conscious activity involved in the two types of reading. If the correlations between eye-movement measures in silent and oral reading are high it may be concluded that the central processes which occur in the two performances are closely related. However, if these correlations are low, it must be inferred that the central processes are quite different in the two types of reading.¹

Anderson and Swanson conducted an early study to determine how the eye-movements made during oral and silent reading differed with subjects' reading ability. To obtain information of this nature, oral and silent eye-movement records were obtained from 124 university freshmen identified as either poor readers, good readers, or as belonging to a randomly selected group of readers. Measurements for (1) the average size and duration of fixations; (2) the average number of regressions; and (3) the average rate of reading were computed for each subject's oral and silent reading. After analyzing these data to ascertain relationships, the researchers pointed out that ". . . the correlations between each eye-movement measure in silent . . . and . . . oral reading were consistently positive and rather high for each group. . . ."2

In spite of the positive and rather high correlations obtained, Anderson and Swanson noted that there were significant mean differences between oral and silent reading in size and duration of fixations, in number of regressions, and in rate of reading. That is, even though the two forms of reading demonstrated a high degree of relationship, silent reading performance was characterized by fewer and shorter pauses,

¹Irving H. Anderson and Donald E. Swanson, "Common Factors in Eye-Movements in Silent and Oral Reading," Psychological Monographs, XLVIII, 3 (1937), 61.

²Ibid., p. 62.

a greater number of fixations, and a more rapid reading rate. Furthermore, it was observed that these differences between oral and silent reading became larger as reading ability increased. As indicated by the investigators, "The differences between eye-movements in silent reading and oral reading of good readers was significantly larger than the differences between eye-movements in silent and oral reading of poor readers."³

Anderson and Swanson advanced an interesting hypothesis as to why correspondence between oral and silent reading should be greater for poor readers. It was their suggestion that even though perception accuracy is of considerable importance for both oral and silent reading, its more prominent role is found in oral reading. Moreover, they suggested that in silent reading the good reader places greater emphasis on comprehension and thinking and less emphasis on perception accuracy. Poor readers, on the other hand, place corresponding emphasis on perception accuracy in both oral and silent reading. Consequently, the poor reader reads silently in a manner quite similar to that used in oral reading. After analyzing the data from their investigation, Anderson and Swanson concluded that their study ". . . supports the contention that there are common elements in silent and oral reading, especially among poor readers."⁴

As part of a larger study, O'Brien examined the eye-movement records of an adult male who had been requested to read a passage silently and then orally. O'Brien found oral reading to be much more awkward and cumbersome than silent reading. Oral reading, it was noted, was characterized by a larger number of fixations, a larger number of

³Ibid., p. 66.

⁴Ibid., p. 69.

regressions, and longer pauses. O'Brien maintained that the larger number of fixations in oral reading was the result of the perceptual process in oral reading being delayed by the requirements of vocalization. The larger number of regressions and longer pauses he attributed to the difficulties encountered in synchronizing articulation with the perceptual process. After analyzing the data from his study, O'Brien concluded that the eye-movement records ". . . [showed] clearly the physiological basis for the unmistakable superiority of silent over oral reading. . . ." ⁵ It is of interest to note that in a subsequent discussion of O'Brien's findings, Cole advanced the position that the processes of oral and silent reading are ". . . the precise reverse of each other." ⁶

Judd conducted a similar study using college and elementary school pupils. An examination of the photographic eye-movement records for subjects' oral and silent reading led Judd to suggest that ". . . the eye moves in an entirely different way in oral reading and in silent reading." ⁷ It was noted that oral reading was characterized by a larger number of fixations and by a shorter recognition span, both of which contributed to a slower reading rate. Judd attributed these differences to the recognition that one who is reading orally is governed by what he can speak while one reading silently is controlled by what the mind

⁵John Anthony O'Brien, Silent Reading (New York: The Macmillan Co., 1921), p. 266.

⁶Luella Cole, The Improvement of Reading (New York: Farrar and Rinehart, Inc., 1938), p. 62.

⁷Charles Hubbard Judd, Reading: Its Nature and Development (Chicago: University of Chicago Press, 1918), p. 21.

can grasp. That is, oral reading is confined to speech units while silent reading is frequently extended to the often broader perception unit of phrases. After examining the research data, Judd advanced the position that ". . . oral reading and silent reading are very different processes."⁸

Buswell illustrated the relationships between silent and oral reading in a somewhat different manner. The purpose of Buswell's study was to determine whether growth in oral and silent reading skill proceeded in a similar fashion. To make such a determination, photographic records of oral and silent eye-movements were obtained for 164 subjects ranging from first grade to the college level. Growth curves for oral and silent reading were plotted on the factors of number of fixations, duration of fixations, and number of regressions. A comparison of these growth curves for the two forms of reading led Buswell to observe that "As a whole the growth curves for the three fundamental characteristics of eye-movements are not conspicuously different."⁹ Simply stated, Buswell's investigation suggested that growth in reading in terms of number and duration of fixations and number of regressions was somewhat parallel for both oral and silent reading. On closer inspection, however, it was observed that at all levels beyond first grade, silent reading was characterized by shorter and fewer fixations as well as by fewer regressions. The major difference between the two forms of reading, Buswell contended, was that beyond first grade oral reading was char-

⁸Ibid., p. 24.

⁹Guy Thomas Buswell, Fundamental Reading Habits: A Study of Their Development (Chicago: University of Chicago Press, 1922), p. 42.

acterized by a smaller recognition unit. Buswell advanced the position that the smaller recognition unit and the larger number of fixations characteristic of oral reading were brought about by the necessity of having to attend to each word for pronunciation. In concluding, Buswell suggested that his investigation ". . . furnishes evidence that there is a fundamental difference between the oral and silent reading processes."¹⁰ This difference, he further pointed out, is a matter of degree rather than kind.

Comprehension, Rate, and Perceptual Accuracy

Swanson made a pertinent observation in his discussion of several early investigations designed to examine relationships between oral and silent reading.¹¹ He contended that differences between oral and silent reading have often been identified on the basis of mechanical manifestations of reading, e.g., photographed eye-movements. He further suggested that mechanical differences between oral and silent reading do not necessarily indicate that the thought-getting processes are different for the two forms of reading. What is needed, Swanson suggested, are research data which deal with the more complex psychological relationship between oral and silent reading.

To obtain data of this nature, Swanson examined the factors of perceptual accuracy, reading comprehension, and reading rate among university freshmen identified as either good or poor silent readers.

¹⁰Ibid., p. 39.

¹¹Donald E. Swanson, "Common Elements in Silent and Oral Reading," Psychological Monographs, XLVIII, 3 (1937), 36-60.

Each subject chosen for the study was requested to read orally three passages described as ". . . containing informative materials of moderate difficulty."¹² Forty-one of the subjects identified as poor silent readers were also requested to read silently a series of phrases and sentences presented tachistoscopically, and to record in writing what they had read. In analyzing the data from these two readings, Swanson noted that "Inaccurate perception was found to be common to both poor oral and [poor] silent reading."¹³ Moreover, it was observed that correlations between the total number of perception errors made in oral reading and in reading materials presented tachistoscopically ranged from a low of .59 to a high of .81. In analyzing comprehension performance data, Swanson found a correlation of .45 between oral and silent reading comprehension in spite of a low reliability indicated for the oral reading comprehension measure. As indicated by Swanson, these data suggested ". . . that those whose comprehension is poorest in silent reading tend to show the poorest comprehension in oral reading."¹⁴ In addition, comparisons of reading rate for the two forms of reading yielded correlations ranging from .26 to .31, ". . . indicating . . . only a slight relationship . . . between rate of oral [reading] and rate of silent reading among poor readers."¹⁵ On closer inspection, however, it was observed that oral reading rate among poor readers demonstrated greater variability than did the oral reading rate of good readers. A comparison of the oral reading rates of the 25 slowest silent readers and the 25 fastest silent readers in the poor reading group ". . . demonstrated

¹²Ibid., p. 38.

¹³Ibid., p. 40.

¹⁴Ibid., p. 44.

¹⁵Ibid., p. 45.

that the slowest silent readers tended to be the slowest oral readers."¹⁶ Simply stated, Swanson's findings suggested that the relationship between oral and silent reading rate is rather low but may become larger when extremes in poor oral and poor silent reading are considered. After analyzing the data from his study, Swanson concluded ". . . that a rather close correspondence exists between certain processes involved in poor silent and poor oral reading."¹⁷

Pintner conducted an early investigation which examined the relationships between oral and silent reading in a somewhat more direct fashion. The purpose of his study was to determine whether the reading comprehension of fourth grade subjects was enhanced or diminished through oral reading. Each of the 23 subjects involved in the study read from eight oral and eight silent reading tests. Measurements for each subject were computed for the number of lines read and the points reproduced from the story. Pintner found that subjects read and retained more when reading silently. It was observed, however, that the ". . . results did not show a very decided advantage on the side of silent reading. . . ."¹⁸

Somewhat similar findings were obtained by Mead in two studies involving larger samples. The first investigation was designed to compare the oral and silent reading performance of 112 sixth grade subjects (five classes).¹⁹ Each subject was administered six two-minute oral and silent reading tests. Measures of reading rate and comprehension

¹⁶Ibid.

¹⁷Ibid., p. 57.

¹⁸Rudolf Pintner, "Oral and Silent Reading of Fourth Grade Pupils," Journal of Educational Psychology, VII, 6 (June, 1916), 337.

¹⁹Cyrus D. Mead, "Silent Versus Oral Reading with One Hundred Sixth-Grade Children," Journal of Educational Psychology, VI, 6 (June, 1915), 345-348.

were computed for both oral and silent reading. Mead found that four of the five classes read more when reading silently than when reading orally. On measures of reading comprehension it was observed that all five of the classes reproduced more after having read silently than after having read orally. The second investigation compared performance in oral and silent reading of 340 subjects ranging in grade level from third grade to tenth grade.²⁰ Mead found that 70% of the subjects performed better in reading rate and in number of points reproduced from the stories when they read silently.

Rogers hypothesized that the apparent superiority of silent reading over oral reading is precipitated by the greater opportunity in silent reading to repeat the materials being read. To test this hypothesis, she conducted a study (a) to determine if the opportunity for greater repetition added to the efficiency of silent reading; (b) to determine if silent reading was more conducive to reading comprehension when this added opportunity was held constant for oral and silent reading; and (c) to determine if there were any differences under these conditions for good or poor readers. Rogers found that with "time" and "amount of reading" held constant, there were no significant differences between subjects' oral and silent reading for both good and poor readers. In discussing the findings of the research, Rogers pointed out that the position advanced that oral reading was detrimental to good but not poor silent readers was not supported. She further suggested ". . .

²⁰Cyrus D. Mead, "Results in Silent Versus Oral Reading," Journal of Educational Psychology, VIII, 6 (June, 1917), 367-368.

that these two types of reading differ little, if at all, in the aspects studied."²¹

Inner Speech

McDade offered additional insight into the possible relationships between oral and silent reading in his discussion of non-oral reading.²² The position forwarded by McDade was that oral and silent reading are distinct processes. Moreover, he suggested that children who are taught to read through the avenue of oral reading continue to use manifestations of oral reading when reading silently. That is, those who are instructed initially through oral reading tend to subvocalize or use inner speech when reading silently. McDade suggested that a more exact term for what is often referred to as silent reading would be "inaudible reading." As suggested by Buswell:

. . . what often passes as silent reading is only noiseless reading. Psychologically, the oral process still persists, only instead of pronouncing the words aloud the child whispers them to himself, . . . The process of subvocalization may be so far suppressed that no lip movements or throat movements are observable, but the reader is conscious of reading word by word instead of being conscious of the meaning only.²³

McDade suggested that reading characterized by inner speech is a two-step process which requires the reader to link together the spoken and printed symbols. The increased attention required in this two-step process, he contended, results in a retardation of both reading rate

²¹Maurine V. Rogers, "Comprehension in Oral and Silent Reading," Journal of General Psychology, XVII (October, 1937), 397.

²²James E. McDade, "A Hypothesis for Non-Oral Reading: Argument, Experiment, and Results," Journal of Educational Research, XXX, 7 (March, 1937), 489-503.

²³Guy Thomas Buswell, "Perpetual Research and Methods of Learning," The Scientific Monthly, LXIV, 6 (June, 1947), 524.

and reading comprehension. He further suggested that the difficulty of inner speech during silent reading can be overcome by teaching beginning reading through a method in which there is no oral reading.

The significance of McDade's investigation for the present study is seen in its suggestion that reading rate and reading comprehension for oral and silent reading may vary with procedures used for initial instruction. Specifically, his position suggested that oral and silent reading may be radically different processes for one who has been taught by the non-oral reading method. Presumably, the position can also be made that variance between the oral and silent reading processes may be a function of the relative emphasis placed on oral or silent reading during initial reading instruction. That this may be so was suggested by Gray. It was her position that research conducted in the early part of the 20th century indicated that an overemphasis on oral reading for beginning reading instruction tended to produce a slow reading rate and poor reading comprehension in silent reading.²⁴

Buswell conducted a large scale longitudinal study designed to compare the effectiveness of the non-oral reading method with that of the traditional method.²⁵ Each subject chosen for the study received instruction in grades one, two, and in some cases grade three through the non-oral reading method or through the traditional reading method which combined oral and silent reading. Comparisons in reading perform-

²⁴Lillian Gray and Dora Reese, Teaching Children to Read (2nd ed.; New York: The Ronald Press Co., 1957), p. 240.

²⁵Guy Thomas Buswell, Non-Oral Reading: A Study of its Use in the Chicago Public Schools, Supplementary Educational Monographs, No. 60 (Chicago: University of Chicago Press, September, 1945).

ance for the two methods were made on the factors of reading rate, reading comprehension, lip movement, and progress through school in terms of grades repeated or skipped.

Buswell found that non-oral reading subjects made better progress through school and demonstrated fewer lip movements than did subjects receiving traditional instruction. There was, however, ". . . more lip movement than should be expected in view of the fact that suppression of vocalization is one of the crucial factors of this method."²⁶ In discussing the matter of vocalization, Buswell asserted in a later writing that "The nonoral method did not eliminate lip movement in all cases, as by theory it should have done, but its superiority . . . was unquestionable."²⁷ It is of interest to note that in a subsequent discussion of these findings, Anderson and Dearborn arrived at an interpretation which differed somewhat from that advanced by Buswell. It was their contention that subjects taught by either of the two methods demonstrated practically the same incidence of vocalization during silent reading.²⁸ The failure to find differences in reading performance between subjects taught with the two methods lends support to the notion that oral and silent reading have much in common.

Buswell's study raised a serious question as to whether or not inner speech can be eliminated from silent reading. Gray and Reese suggested that inner speech (tiny vibrations of the throat) is present

²⁶Ibid., p. 21.

²⁷Buswell, "Perpetual Research and Methods of Learning," p. 525.

²⁸Irving H. Anderson and Walter F. Dearborn, The Psychology of Teaching Reading (New York: Ronald Press Co., 1952), p. 157.

". . . even in the best silent reading."²⁹ Smith and Dechant suggested that inner speech is characteristic of practically all if not all silent reading.³⁰ Furthermore, they have advanced the position that oral and silent reading may involve the same fundamental mental processes with oral reading being the overt manifestation of this process and silent reading being the implicit manifestation. Anderson and Dearborn forwarded a hypothesis on this matter which differed considerably from that advanced by McDade and investigated by Buswell. It was their contention that inner speech is a normal aspect of silent reading.³¹ That this may be so was suggested in an early investigation by Jacobson, designed to "determine . . . what takes place in the nervous or neuromuscular system . . . for various forms of mental activity, and to measure the process in physical terms."³² To obtain information of this nature, twenty subjects placed in a state of self-imposed relaxation were requested to imagine that they were performing certain physical or mental activities and to recall certain activities that they had performed in the past. Measurements of changes in neuromuscular activity were obtained from subjects during each of the imagined activities.

In analyzing the data, Jacobson found that when subjects were thinking about a given activity their muscles contracted as if they

²⁹Gray and Reese, loc. cit.

³⁰Henry P. Smith and Emerald V. Dechant, Psychology in Teaching Reading (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1961), p. 187.

³¹Anderson and Dearborn, op. cit., p. 160.

³²Edmund Jacobson, "The Electrophysiology of Mental Activities," The American Journal of Psychology, XLIV, 4 (October, 1932), 679.

were actually performing the activity. When visual activities were imagined it was noted that subjects' eyes contracted as if they were actually looking at the objects involved. Moreover, when verbal activities were imagined, it was observed that subjects' lip and tongue muscles contracted as if they were speaking in a rapid and abbreviated manner. Simply stated, Jacobson's investigation suggested that muscular activity including inner speech is a normal aspect of thinking. Additional support for this position is offered by Pomerantz in her recent review of the research on the topic. As indicated by Pomerantz "... there is no proof that subvocalization causes poor reading ability or that the absence of this activity is a sign of good reading."³³ Furthermore, "... [subvocalization] might be viewed as a natural developmental reinforcement mechanism."³⁴

The more recent investigations of inner speech during silent reading provided additional insight into the possible relationships between oral and silent reading. Edfeldt investigated the silent speech of university freshmen identified as either good, medium, or poor silent readers. The following hypotheses were considered in making the investigation:

1. Good readers engage in less silent speech than do poor readers.
2. The reading of an easy text results in less silent speech than does the reading of a difficult one.

³³Helen Pomerantz, "Subvocalization and Reading," The Reading Teacher, XXIV, 7 (April, 1971), 665.

³⁴Ibid.

3. The reading of a clear text results in less silent speech than does the reading of a blurred one.³⁵

In analyzing the data, Edfeldt found that there was more inner speech among poor readers than among good readers and that inner speech tended to increase for all readers as the reading materials became more difficult. The analysis of the data led Edfeldt to make two additional observations of interest. These are first, ". . . that silent speech occurs in the reading of all persons"³⁶ and second, that it is likely that "silent speech actually constitutes an aid toward better reading comprehension."³⁷

Additional support for the position that inner speech is both a normal aspect of silent reading as well as an adjunct to reading comprehension was presented in a study by Cleland. The objectives of his study were

1. To determine the incidence of vocalism during silent reading of two groups of intermediate grade children, i.e., one group classified as reading retardates and the second group as reading achievers.

2. To determine if vocalism during silent reading is a desirable, natural and helpful adjunct of reading and learning, or, if it is an undesirable adjunct of the silent reading process.³⁸ . . .

An analysis of the data led the researcher to conclude that ". . . implicit speech or inner speech is a natural adjunct of the silent reading process. . . ."³⁹ Contrary to the positions advanced by several

³⁵Ake W. Edfeldt, Silent Speech and Silent Reading (Chicago: University of Chicago Press, 1960), p. 153.

³⁶Ibid., p. 154.

³⁷Ibid.

³⁸Donald L. Clelend, James Laffey, and Guy W. Anderson, "Vocalism in Silent Reading," Final Report, 1968, Project Number BR-5-0374 (Washington, D.C.: United States Department of Health, Education, and Welfare, Office of Education), p. 89.

³⁹Ibid.

other investigators, Cleland suggested that readers use implicit speech to reinforce or recognize words when more familiar or easy materials are being read. It was suggested that greater implicit speech occurred with easy materials because there was greater comprehension in easy materials. The rationale for this was that inner speech served as an additional sensory input in comprehending and naturally occurred in greater frequency when comprehension was greater. It was also noted that slower reading rates were accompanied by greater implicit speech. Cleland suggested that this phenomenon occurred because the speech patterns employed when reading silently at a slow rate paralleled somewhat the speech patterns employed in oral language (reading). Support for this position was evidenced in the finding that implicit speech decreased as disparity between silent reading rate and oral language rate increased. In addition to the above, it was observed that retarded readers demonstrated greater implicit speech under all reading conditions than did the more able readers. In spite of this greater reliance on implicit speech, comprehension on the more difficult materials was not enhanced. In a later discussion of this finding, Pomerantz suggested that inner speech may be an adjunct to reading comprehension only when materials being read are not at the frustrational level.⁴⁰

Anderson and Dearborn have advanced the position that inner speech may be a technique employed by a reader to assist in the understanding of materials being read.⁴¹ Investigations dealing with inner speech tended

⁴⁰Pomerantz, op. cit., pp. 665, 667.

⁴¹Anderson and Dearborn, The Psychology of Teaching Reading, p. 166.

to support this position. Implicit in such a position is that oral and silent reading may demonstrate a closer relationship when the demands of comprehension are greater.

INVESTIGATIONS WHICH EXAMINED THE EFFECTS OF PURPOSES FOR READING ON READING PERFORMANCE

The present study advanced the position that performance in oral reading will vary under conditions of careful reading, reading for specific purposes, and reading for general purposes. To date not a single investigation has been found which clearly illustrated the effects of purposes for reading on oral reading performance. An examination of the literature has revealed, however, several studies which have investigated the effects of purposes for reading on silent reading performance. The following review of the literature has given consideration to the silent reading investigations concerned as well as to the limited oral reading investigation available on the subject. The inclusion of silent reading investigations in the present review is done with the recognition that silent and oral reading may not be similar processes.

Oral Reading Investigation

Swanson examined the effects of purposes for reading on performance in oral reading. Subjects identified as poor readers were instructed prior to the reading of two passages to read ". . . so that they could comprehend questions at the completion of each reading."⁴² On a third passage subjects were instructed to read so that meaning could be communicated to listeners, but were told that questions would not be asked

⁴²Swanson, "Common Elements in Silent and Oral Reading," p. 55.

at the conclusion of reading. Swanson found that subjects made more word accuracy errors on the passage in which reading for meaning was not emphasized. There was an average of 14.86 errors on passages in which reading for meaning was not emphasized and 10.76 on passages in which meaning was emphasized. As suggested by Swanson, ". . . the requirement to meet specific comprehension demands tended to produce more meaningful and consequently more accurate reading."⁴³

Silent Reading Investigation

Among the early investigations dealing with the effectiveness of purposes for reading were two studies conducted by Germane using college students and students selected from grades 6, 7, and 8. The purpose of Germane's investigations was to examine the effectiveness of two different procedures for reading. The first procedure required subjects to quickly read an article under conditions of prequestioning, and then to answer a series of questions referring back to the article when necessary. The second procedure required subjects to read and reread the article for the same length of time required in the first procedure. Germane found that groups reading to answer questions answered 30.5% more posttest questions where college students were involved and 53.8% more posttest questions where subjects from grades 6, 7, and 8 were involved. As suggested by Germane, the findings seemed to indicate that ". . . placing in the hands of pupils the specific questions on the assignment is much more efficient than undirected reading."⁴⁴

⁴³Ibid., p. 58.

⁴⁴Charles E. Germane, "The Value of the Controlled Mental Summary as a Method of Studying," School and Society, XII, 311 (Dec. 11, 1920), 593.

As indicated by Holmes, the investigations conducted by Germane were criticized on the basis that the questions asked at the conclusion of reading were related to the prequestions given to the directed reading group.⁴⁵ Thus, the critics contended, the undirected reading group might have retained supplementary meanings (non test-specific content) not considered in the postquestions. Holmes conducted a study to examine the effects of directed reading, careful reading, and rereading without questions on test-specific content as well as on non test-specific content. She found that guided reading significantly surpassed careful reading and reading without questions in both immediate and delayed recall when test-specific performance was examined. When non test-specific performance was examined, it was observed that guided reading did not differ from careful reading and rereading treatments on delayed recall. When immediate recall of total performance (involving both test-specific and non test-specific questions) was examined, it was noted that guided reading significantly surpassed the other two forms of reading on historical materials, but that the three procedures were equally effective on science reading materials. Comparisons of total performance for delayed recall indicated a significant superiority of guided reading over the other two forms of reading.

More recently, Landry examined effects of four different testing procedures on the immediate and delayed recall of materials read by

⁴⁵Eleanor Holmes, "Reading Guided by Questions versus Careful Reading Without Questions," The School Review, XXXIX, 5 (May, 1931), 361-71.

fifth grade subjects.⁴⁶ The four testing procedures employed involved (1) presenting subjects with problems or questions prior to reading; (2) presenting subjects with a summary statement at the conclusion of reading in addition to the above; (3) inserting center and side headings into the materials being read in addition to the above; and (4) having subjects simply read the materials and answer the question. Landry found that subjects reading under the four conditions did not differ significantly in either delayed or immediate recall of materials read.

As part of a larger study Williams investigated the effects of different directions for reading on the delayed and immediate recall of 180 university students. The directions for reading given prior to reading were identified as:

- A. . . . read to remember for an immediate test only,
- B. . . . read to remember for an immediate and a delayed test, or
- D. [sic] . . . read to remember for an immediate test, then (after the immediate test) to remember for a delayed test.⁴⁷

Williams found significant differences in delayed recall favoring the group instructed to read for immediate and delayed retention. Other differences, however, were not beyond the level expected by chance.

Carrozi conducted a study using above average high school students to ". . . determine the main and interactive effects of reading time, . . . and instructional format on short and long-term retention of

⁴⁶Donald L. Landry, "The Effect of Organizational Aids on Reading Comprehension" (unpublished Doctor's dissertation, University of Connecticut, 1966).

⁴⁷Robert T. Williams, "A Study of the Influence of Different Directions for Reading on Immediate and Delayed Recall" (unpublished Doctor's dissertation, University of Kansas, 1970), p. 18.

prose material."⁴⁸ The instructional formats used in the study were identified as questions before, questions after, and no questions, in which case subjects were instructed to read carefully. Carrozi found that with reading time fixed at a short interval there were no differences in short or long term retention of incidental or relevant materials for any of the three questioning techniques employed. With reading time extended, however, there were significant differences in short and long term retention of incidental materials favoring the group which did not receive prequestions. In addition, when subjects' test relevant responses were examined, Carrozi found that placement of questions before reading did not facilitate retention of materials related to such prequestions. That is, "The analysis of relevant scores resulted in no significant differences among the three treatment conditions for both short and long term retention."⁴⁹ In discussing this latter finding, the researcher suggested that the insignificant difference obtained might have been the result of the inadequate number of test-specific questions included in the posttest.

Goudy conducted a study to examine the effectiveness of directed and nondirected reading using three hundred fourth grade children.⁵⁰ In analyzing the data from his study he found that subjects reading under nondirected conditions performed in reading comprehension signi-

⁴⁸John F. Carrozi, "The Effects of Reading Time, Type of Question and Instructional Format on Short and Long-Term Retention of Relevant and Incidental Prose Material" (unpublished Doctor's dissertation, University of Delaware, 1970), p. 18.

⁴⁹Ibid., p. 66.

⁵⁰Charles E. Goudy, "Reading--Directed or Not?", The Elementary School Journal, LXX, 5 (February, 1970), 245-247.

ificantly better than did subjects reading under directed reading conditions. This finding was consistent for subjects identified as high middle and low reading achievers. Comparisons of subjects' reading performance in terms of reading for appreciation did not, however, indicate differences under directed and nondirected reading.

Using high school students, Good conducted a study ". . . to determine the effect of the pupil's attitude on comprehension in reading. . . ."51 Four different reading attitudes were induced by the researcher as subjects read from four different forms of a standardized test. The four attitudes employed were identified as encouragement, in which pupils were encouraged by the examiner to do their best work; skimming, in which subjects were directed to read a prequestion and then to rapidly read for an answer to that question; discouragement, in which subjects were discouraged by pointing out the difficulties of reading the passage; and reproduction, in which subjects were directed to remember the materials read because questions would be asked on the following day. Good found that subjects demonstrated their best reading comprehension and fastest reading rate when reading to reproduce answers. The poorest reading comprehension and the slowest reading rate, on the other hand, occurred when subjects read under the condition identified as encouragement. Good made an important point in discussing the possible limitations of his study when he noted that one cannot be certain that the attitudes toward reading intended were actually realized.

⁵¹Carter V. Good, "The Effect of Mental Set or Attitude on the Reading Performance of High School Pupils," Journal of Educational Research, XIV, 3 (October, 1926), 178.

Distad investigated subjects' reading performance under conditions identified as undirected reading, reading to answer specific questions, reading with a general problem in mind, and reading to answer questions raised by the group.⁵² To obtain information of this nature, subjects matched on I.Q. and reading achievement were selected from 12 sixth grade classes. In examining data from the study, the researcher found significant group differences favoring specific question, general problem, and raised question treatments above the undirected group in five out of twelve comparisons. Other differences were not beyond the level expected by chance.

Non test-specific content. As part of a larger study Rothkopf, using 159 university students, compared the effectiveness of presenting questions prior to reading a passage with that of presenting questions only at the conclusion of reading a passage. Rothkopf found that prequestion subjects performed at the same level as postquestion subjects when comprehension of question-specific content was considered. However, when general test performance was considered, it was observed that postquestion subjects' achievement in comprehension was significantly higher than that of the prequestion subjects. As indicated by Rothkopf, "... questions, . . . presented after reading . . . have apparently both specific and general facilitative effects . . . [while] questions . . . presented before the relevant text was read produced only question

⁵²H. W. Distad, "A Study of the Reading Performance of Pupils Under Different Conditions on Different Types of Materials," Journal of Educational Psychology, XVIII, 4 (April, 1927), 247-258.

specific facilitative effects."⁵³ Furthermore, on measures of reading rate obtained under pre- and postquestioning conditions, Rothkopf observed that subjects read at a markedly slower rate of reading when questions appeared only after the reading of a passage.

Frase conducted a similar investigation designed ". . . to determine how factual questions might be used to improve retention of prose materials."⁵⁴ Frase, like Rothkopf, found that subjects to whom questions were presented after reading scored significantly higher on tests involving non test-specific questions. Frase also found that subjects to whom questions had been presented after each passage scored significantly higher on tests involving test-specific content as well. As indicated by Frase, "Placing test questions after the prose passage was the optimal procedure for both specific and general retention."⁵⁵

An interesting variation of Frase's previous investigations was presented when he examined the relative effectiveness of general pre-questions, comparative prequestions, and specific prequestions.⁵⁶ It was hypothesized that specific prequestion subjects would demonstrate superior retention of test-specific materials while general prequestion subjects would demonstrate superior performance on total retention.

⁵³Ernst Z. Rothkopf, "Learning from Written Instructive Materials: An Exploration of the Control of Inspection Behavior by Test-Like Events," American Educational Research Journal, III, 4 (November, 1966), 247.

⁵⁴Lawrence T. Frase, "Learning from Prose Material: Length of Passage, Knowledge of Results, and Position of Questions," Journal of Educational Psychology, LVIII, 5 (August, 1967), 266.

⁵⁵Ibid., p. 270.

⁵⁶Lawrence T. Frase, "Some Unpredicted Effects of Different Questions upon Learning from Connected Discourse," Journal of Educational Psychology, LIX, 3 (June, 1968), 197-201.

Two criterion measures, one addressed to test-specific content, the other to overall comprehension, were obtained for each of the 84 university students participating in the study.

Frase found that the specific prequestion group, as hypothesized, demonstrated superior performance on materials relevant to the specific prequestions. As indicated by Frase, "The most precise question led to the most efficient acquisition of the specific stimulus-response association, confirming the hypothesis."⁵⁷ However, comparisons of total retention scores for the three treatment groups indicated significant differences favoring the specific prequestion group above the general prequestion group. As suggested by Frase ". . . the general question group scored lowest whether the criterion of performance was a specific question-relevant test item or the total retention test."⁵⁸

It is of interest to note that the hypothesized superiority on total retention for the general prequestion group was predicated on the assumption that the general purposes employed had a large number of associates in their corresponding passages and consequently that subjects reading for such purposes would process more information. Frase conducted a study to determine if the general prequestions of the previous study did indeed have a larger number of associates within a passage than did the corresponding comparative and specific purposes. Sixty undergraduate subjects were randomly assigned to either a specific question group, a comparative group, or a general group. Each group was requested to read a passage and underline those sentences which

⁵⁷Ibid., p. 200.

⁵⁸Ibid.

contained information necessary to answer the designated question. Frase found that the general question subjects underlined the greatest number of words. It was also observed that the responses of the general question group were substantially more variable than were those of the other groups. That is, 27% of the general question subjects underlined the words that were necessary to answer the question rather than the necessary sentences. All subjects in the other two groups, on the other hand, underlined only sentences. As suggested by Frase, the general question subjects appeared to ignore the instructions. He further speculated that some general question subjects apparently adopted a strategy of excluding certain words and suggested that such a strategy would make it difficult to learn from a given passage. An equally tenable hypothesis, however, could have been that the specific nature of Frase's general prequestions, i.e., "When were the men in the paragraph born?" precipitated a reading strategy analogous to skimming. Stauffer defines skimming as

"... the ability to read swiftly and lightly to locate bits of information literally stated. Usually the answers sought are stated in a word or two or in a phrase. . . . If he finds the answer the reading usually results in 100 percent attainment but not necessarily 100 percent comprehension.⁵⁹

Simply stated, it can be suggested that the very precise and highly structured nature of Frase's general prequestions caused some subjects to read only for isolated bits of information and resulted in a lower reading attainment for the general question group. It can also be suggested that general purposes which are less precise and less structured

⁵⁹Russell G. Stauffer, Directing Reading Maturity as a Cognitive Process (New York: Harper & Row, Publishers, 1969), p. 438.

could, as previously suggested by Frase, involve the processing of larger amounts of information.

Advance organizers. Recent investigations dealing with advance organizers have provided additional insight into the possible effectiveness of purposeful reading. Ausubel hypothesized that verbal learning and retention of unfamiliar materials can be enhanced through the use of advance organizers. Several investigations have been conducted by Ausubel to test this hypothesis. In the first such study, college students equated on the factors of sex and area of specialization were assigned to either a control or experimental group. Both groups were presented with introductory materials prior to reading. The introductory materials presented to the control group were related to the passage to be read but contained no conceptual material (advance organizers) that would assist the reader in organizing the passage. The experimental group, on the other hand, was presented with advance organizers prior to reading. Ausubel found significant differences in materials retained by subjects after three days favoring the experimental group. As suggested by the researcher, "Comparison of the mean retention scores of the experimental and control groups unequivocally supported the hypotheses."⁶⁰

In a later discussion Ausubel forwarded the position that advance organizers could assist readers in discriminating new concepts from anal-

⁶⁰David P. Ausubel, "The Use of Advance Organizers in the Learning and Retention of Meaningful Verbal Material," Journal of Educational Psychology, LI, 5 (August, 1960), 271.

ogous and often conflicting concepts previously learned.⁶¹ To test this hypothesis, college subjects were randomly assigned to either one control group or one of two experimental groups. Control subjects were presented with introductory materials dealing with the history of the topic being read rather than with its concepts. The two experimental groups, on the other hand, were presented advance organizers as introductory materials. One experimental group received an expository organizer addressed to the concepts of the passage being read. The other experimental group received a comparative organizer comparing the concepts of Buddhism with those previously learned on a similar topic--Christianity. Ausubel found significant differences in short term retention favoring comparative treatment subjects who had scored below the median on a previous test dealing with knowledge of Christianity. On long term retention, significant differences were found favoring comparative and expository treatment group subjects who also scored below the median in previous knowledge of Christianity. The researchers concluded that comparative and expository organizers appeared to be of value in learning materials which paralleled previously learned concepts when the concepts previously learned were ambiguous.

Ausubel conducted a later investigation to examine the effectiveness of advance organizers in the learning of parallel materials.⁶² The materials to be learned were identified as dealing with Buddhism and Zen

⁶¹David P. Ausubel and Donald Fitzgerald, "The Role of Discriminability in Meaningful Verbal Learning and Retention," Journal of Educational Psychology, LII, 5 (August, 1961), 266-274.

⁶²David P. Ausubel and Mohamed Youssef, "Role Of Discriminability in Meaningful Parallel Learning," Journal of Educational Psychology, LIV, 6 (September, 1963), 331-336.

Buddhism. As suggested by Ausubel, the problem in learning parallel materials (Buddhism and Zen Buddhism) arises when subjects must discriminate between the analogous ideas encountered in such materials and in turn must discriminate between these and previously learned analogous ideas (Christianity). To assist in this matter, subjects in the study were supplied with advance organizers specifically designed to enhance their discrimination between the analogous ideas involved in the areas Christianity, Buddhism, and Zen Buddhism. In analyzing the data from the study, the researchers found that the use of advance organizers did significantly facilitate the learning of one set of materials--Buddhism--but did not result in significant differences for the materials involving Zen Buddhism. The absence of significant differences for the advance organizer on Zen Buddhism materials was attributed to the recency with which the analogous materials were learned. That is, the Buddhism and Zen Buddhism materials being learned at approximately the same time could readily be discriminated without the benefit of the organizer.

Purposes for Reading and Rate of Reading

A pertinent question was raised by Carlson when he asked "What is the relationship of speed of reading to accuracy of comprehension at different levels of intelligence when reading for different purposes?"⁶³ To obtain an answer to this question, measures of reading rate and reading comprehension were secured for 330 fifth grade subjects classified as

⁶³Thorsten R. Carlson, "The Relationship Between Speed and Accuracy of Comprehension," Journal of Educational Research, XLII, 7 (March, 1949), 507.

being at the upper, middle, or lower level of intelligence. The three reading conditions under which these measures of reading performance were obtained were identified as reading to predict outcomes, reading to follow precise directions, and reading to note details. Carlson found that speed of reading and reading comprehension under different purposes for reading varied with the level of intelligence. That is, "At the upper level . . . there was a significant tendency for the fast reader to be the better comprehender."⁶⁴ In reading to note details, on the other hand, just the opposite was true. "[There] was a significant tendency for the slower reader at the lower level . . . to be the better comprehender."⁶⁵ In discussing his investigation Carlson pointed out that the tests employed were likely too easy for the upper intelligence groups and too difficult for the lower intelligence group. Thus, he suggested that chance tended to influence the scores and to reduce the obtained correlation. Carlson further pointed out that none of the correlations obtained were sufficiently large to permit confident predictions.

Blommers and Lindquist conducted a study using high school subjects identified as good or poor comprehenders to investigate the relationships between reading rate, reading comprehension, and purposes for reading.⁶⁶ Each subject involved in the study was directed to read at a rate best suited for the purpose given. Measures of reading com-

⁶⁴Ibid., p. 509.

⁶⁵Ibid.

⁶⁶Paul Blommers and E. F. Lindquist, "Rate of Comprehension of Reading: Its Measurement and its Relation to Comprehension," Journal of Educational Psychology, XXXV, 8 (November, 1944), 449-473.

prehension and reading rate were obtained for each subject under these conditions. The researchers found that reading rate and reading comprehension were significantly related but that this relationship was quite low, yielding correlations ranging from .21 to .39. In addition, it was observed that good comprehenders adjusted their reading rate to suit the purpose at hand by lowering their reading rate as materials increased in difficulty. Poor comprehenders, on the other hand, read both easy and difficult materials at approximately the same rate.

As a prelude to a similar study conducted at a later date, Shores raised the question, "How do sixth grade children read science materials when their purpose is directed toward main idea or toward keeping a series of ideas in mind in sequence?"⁶⁷ To obtain answers to this question, Shores conducted a study using two groups of sixth grade subjects matched on chronological and mental age, general reading abilities, and achievement in science. After analyzing correlation data for reading rate and reading comprehension, Shores concluded that the purpose for which one reads influenced the rate at which one reads. In addition, Shores found that fast readers were good readers for some types of materials and for given purposes. On other types of materials, however, such as the science materials used in the study and when other purposes for reading were considered, Shores found no relationship between speed of reading and reading comprehension.

Traxler used 80 eighth grade subjects to examine the relationship between reading rate and reading comprehension for seventh grade subjects.

⁶⁷J. Harlan Shores, "Reading Science Materials for Two Distinct Purposes," Elementary English, XXXVII (1960), 546.

Each subject involved in the study was directed to read a passage as fast as possible with understanding, and was told that questions would be asked at the conclusion of reading. Traxler found correlations between reading rate and comprehension ranging from .08 to .20. In a related study in which 92 high school subjects read historical materials, reading rate and comprehension yielded a correlation of only .08. After analyzing the data from the study the researcher concluded that "It appears that when high school pupils read with knowledge that they will be asked questions about the material when they finish reading, the slow and rapid readers answer the questions about equally well."⁶⁸

As part of a larger study, Levin investigated the relationships between purposes for reading and flexibility of reading rate of 100 ninth grade female subjects identified as either good or poor readers.⁶⁹ She found that purposes for reading had a more pronounced influence on the flexibility of subjects identified as good readers while the difficulty of the materials had a greater influence on the flexibility of poor readers.

Purposes for Reading and Eye-Movements

Investigations which have analyzed eye-movements during reading have provided additional insight as to how performance in reading may vary with different purposes for reading. An early investigation of

⁶⁸ Arthur E. Traxler, "The Correlation Between Reading Rate and Comprehension," Journal of Educational Research, XXVI, 2 (October, 1932), 101.

⁶⁹ Beatrice J. Levin, "An Investigation of the Flexibility of Reading Rate" (unpublished Doctor's dissertation, Temple University, 1966).

this nature was conducted by Anderson using university students identified as either good or poor readers.⁷⁰ Each subject involved in the study was requested to read separate passages for the main idea, for a moderate knowledge, or for a detailed knowledge. Anderson found that good readers demonstrated their most regular eye-movements when reading for the general idea. Poor readers, on the other hand, indicated their most regular eye-movements when reading to obtain a moderate knowledge of the text. Both good and poor readers, on the other hand, indicated their most irregular eye-movements when reading for a detailed knowledge of the passage involved.

Judd made a similar investigation using 20 subjects ranging in grade level from the sixth grade to the college level.⁷¹ Each subject was requested to read a passage rapidly to find out what it was about. Subjects were then requested to reread the same passage more carefully and were told that questions would be asked after reading. Judd found an increase in the number of regressions for most subjects when subjects were instructed to read carefully and informed that questions would be asked.

A more recent investigation of this nature was conducted by Brown using third and seventh grade subjects reading at a fifth grade level. The purpose of his study was to investigate the effects of three different reading sets (a) on the efficiency of eye-movements;

⁷⁰Irving H. Anderson, "Studies in the Eye-Movements of Good and Poor Readers," Psychological Monographs, XLVIII, 3 (1937).

⁷¹Charles Hubbard Judd, Silent Reading: A Study of the Various Types, Supplemental Educational Monographs No. 23 (Chicago: University of Chicago Press, 1922).

(b) on reading comprehension; and (c) on reading rate. The three different reading sets involved in the study were identified as

- "1. A set to read in the subject's ordinary manner.
- "2. A set to read for the main idea of a selection.
- "3. A set to read for detailed information."⁷²

Eye-movement comparisons, in terms of number of fixations and regressions, span of recognition, and duration of fixations, indicated that third grade subjects (advanced readers) demonstrated their most efficient eye-movements in reading for main idea when this was compared with reading for details. Seventh grade subjects (retarded readers), on the other hand, demonstrated their most efficient eye-movements when reading as they usually did when this was compared with the other two sets. It was also noted that third grade subjects demonstrated greater over-all efficiency in eye-movements than did their seventh grade counterparts.

In addition, the researcher found that both advanced and retarded readers demonstrated their best reading comprehension when reading for main idea or for detailed information. Comparisons between advanced and retarded readers, however, indicated that seventh grade subjects scored significantly higher in comprehension than did third grade subjects under all three conditions.

Rate of reading comparisons indicated that the advanced readers demonstrated a significantly faster reading rate in reading for main

⁷²Don Arlen Brown, "The Effect of Selected Purposes on the Oculo-Motor Behavior and Comprehension of Third and Seventh Grade Students of Fifth Grade Reading Ability" (unpublished Doctor's Dissertation, University of Oregon, 1964), p. 4.

idea when this was compared with reading for detailed information. As indicated by the investigator:

This would seem to indicate that the third grade subjects were making an adjustment in their reading rate to attempt to gain a more thorough grasp of the material. It is interesting that this change in rate of reading was not rewarded by a significant improvement in percent of comprehension.⁷³

Retarded readers, on the other hand, demonstrated their slowest reading rate when reading for details. It was also noted that third grade subjects read at a faster rate of reading under all three conditions than did their seventh grade counterparts.

Smith conducted a study designed to examine the effects of reading for different purposes on the ocular motor behavior of 120 university freshmen identified as either good or poor readers.⁷⁴ The four purposes for which subjects read were identified as reading in your usual manner, reading for specific information, reading for the main idea, and reading for critical analysis. Smith found that rate of reading, number of fixations and regressions, and span of recognition changed with the purpose for which subjects were reading while duration of fixations remained constant. Subjects demonstrated their fastest reading rate, the smallest number of fixations, and their largest span of recognition when reading for specific purposes. When reading for critical analysis, on the other hand, subjects read slower, made more and longer fixations, made a larger number of regressions, and read with a shorter recognition span.

⁷³Ibid., p. 54.

⁷⁴Alan Craig Smith, "The Influence of Change in Purpose upon Ocular Motor Reading Behavior of University Freshmen" (unpublished Doctor's dissertation, University of Oregon, 1963).

As part of a larger study Walker investigated the effects of different comprehension requirements on the eye-movements of college freshmen identified as good silent readers.⁷⁵ The different comprehension requirements employed in the study were induced by the examiner through having subjects read for either a general idea, a moderate comprehension, or a detailed knowledge. Walker found an increase in the requirements for comprehension to be accompanied by an increase in the duration of fixations, a decrease in the size of fixations, and a decrease in reading rate.

INVESTIGATIONS WHICH EXAMINED THE RELATIONSHIPS BETWEEN READING COMPREHENSION AND ORAL READING WORD ACCURACY

The present study hypothesized that oral reading word accuracy will vary under conditions of careful reading, reading for specific purposes, and reading for a general purpose. However, a direct relationship between purposeful reading and word accuracy has not been firmly established. The difficulty in making such a direct relationship stems mainly from the inadequate number of investigations addressed to the topic. The rationale of the present study suggested that reading comprehension will vary under conditions of careful reading, reading for specific purposes, and reading for general purposes, and that oral reading word accuracy, in turn, will vary with reading comprehension. The following is a review of the literature which has investigated the relationships between reading comprehension and oral reading word accuracy.

⁷⁵Robert Y. Walker, "The Eye-Movements of Good Readers," Psychological Monographs, XLIV, 3 (1933), 95-117.

Word Accuracy and Reading Proficiency

Among the early investigations designed to examine oral reading word accuracy was a study conducted by Fairbanks. In examining the oral reading errors of college freshmen identified as good or poor silent readers, Fairbanks found that "The average poor reader makes three times as many errors as the average superior reader. . . ." ⁷⁶ Poor readers, it was observed, made an average of 4.7 errors per subject, while good readers made only 1.72 errors per subject.

Somewhat similar findings were indicated in a study by Swanson. ⁷⁷ In comparing the oral reading performance of university freshmen identified as either good or poor silent readers, it was found that poor silent readers made approximately four times as many oral reading errors as did good silent readers reading the same materials. Furthermore, on measures of relationship between oral reading word accuracy and silent comprehension, a correlation of .44 was obtained between poor silent readers' word accuracy performance and performance in silent reading. Swanson maintained that higher correlations could be expected with nonselected subjects. In a separate study the researcher investigated the relationships between oral reading word accuracy and performance in silent reading using 88 randomly selected university freshmen. Swanson found that oral reading word accuracy and performance in silent reading comprehension for this nonselected group yielded a correlation of .53. The two correlations obtained, Swanson suggested, provided some evidence that there is a relationship between word accuracy and reading performance.

⁷⁶Grant Fairbanks, "The Relation Between Eye-Movements and Voice in the Oral Reading of Good and Poor Silent Readers," Psychological Monographs, XLVIII, 3 (1937), 105.

⁷⁷Swanson, "Common Elements in Silent and Oral Reading."

Additional support for the position that oral reading word accuracy will vary with reading comprehension was supplied by Swanson's comparisons using two groups of subjects identified respectively as the poorest and best readers of the poor reading group. As indicated by the researcher, a comparison of the word accuracy performance of the 25 subjects who scored lowest in silent reading performance with that of the 25 poor silent readers who scored highest in silent reading "... indicates that those who scored lowest in silent reading ability tended to make a significantly larger number of errors in oral reading"78

Word Accuracy and Other Measures of Reading Performance

Further support for the position that oral reading word accuracy will vary with reading comprehension was found in Gilmore's discussion of the Cooperative Research Program in First Grade Reading Instruction.⁷⁹ As indicated by Gilmore, data from the 1964-1965 research program indicated moderately high positive correlations between Gilmore word accuracy and certain other measures of reading achievement. Correlations reported from the study ranged from .75 to .83 for word accuracy and Stanford Achievement Test Word Reading, from .78 to .85 for word accuracy and Stanford Achievement Test Paragraph Meaning, and from .81 to .90 for word accuracy and performance on the Gates Word Pronunciation Test.

A similar high relationship between reading comprehension and performance in oral reading word accuracy was indicated in a study by

⁷⁸Ibid., p. 54.

⁷⁹John V. Gilmore and Eunice C. Gilmore, Gilmore Oral Reading Test: Manual of Directions (New York: Harcourt, Brace and World, Inc., 1968), p. 27.

Garlock, Dollarhide, and Hopkins. Using subjects ranging in grade level from first grade through twelfth grade, the researchers compared word accuracy performance from Form A of the Gilmore Oral Reading Test with comprehension performance from the Wide Range Achievement Test. Correlation of word accuracy and reading comprehension from these two measures yielded a value of .91. As indicated by the researchers, "The present study found the W.R.A.T. and the Gilmore Oral Reading Test--Accuracy to convey almost identical and interchangeable information."⁸⁰

More recent investigations have failed to clearly support the position that oral reading word accuracy will vary with reading comprehension. In a study examining 1200 miscues (oral reading errors) of fifth grade subjects identified as proficient readers, Goodman and Burke found little relationship between word accuracy and reading comprehension.⁸¹

As part of a larger study Allen examined the performance in word accuracy of 15 second, fourth, and sixth grade subjects identified as average readers.⁸² Allen found that the total number of miscues per hundred words demonstrated little relationship to subjects' comprehension of the passage read. It was observed that second and fourth grade sub-

⁸⁰Jerry Garlock, Robert S. Dollarhide, and Kenneth D. Hopkins, "Comparability of Scores on the Wide Range and the Gilmore Oral Reading Tests," California Journal of Educational Research, XVI, 2 (March, 1965), 56.

⁸¹Kenneth S. Goodman and Carolyn Burke, Study of Children's Behavior While Reading Orally (Washington, D.C.: United States Department of Health, Education and Welfare, Office of Education, 1968).

⁸²p. D. Allen, "A Psycholinguistic Analysis of the Substitution Miscues of Selected Oral Readers in Grades 2, 4, and 6, and the Relationship of these Miscues to the Reading Process: A Descriptive Study" (unpublished Doctor's dissertation, Wayne State University, 1969).

jects with the smallest number of miscues per hundred words demonstrated the best reading comprehension and that subjects with the largest number of miscues per hundred words demonstrated the poorest reading comprehension. It was also found, however, that sixth grade subjects with the largest number of miscues per hundred words demonstrated the best comprehension of the passage read.

Burke conducted a study using six sixth-grade subjects identified as proficient readers to, among other things, ". . . provide a general analysis of the reading developmental level of older children. . . ." ⁸³ In analyzing the data from the study, the researcher found ". . . no relationship between the number of miscues made and a reader's comprehension score" ⁸⁴ when comprehension involved retelling the events of a story. However, a somewhat paradoxical position was indicated by the researcher's finding that "The number of miscues made per hundred words, 2.5 to 5.2 M.P.H.W., is more moderate than for younger proficient readers." ⁸⁵ That is, the number of miscues obtained per hundred words by Burke's sixth grade proficient readers was fewer than the number obtained by proficient readers of a younger age. Implicit in this latter finding was the notion that oral reading word accuracy will vary with reading maturity and presumably with one's skill in comprehending materials read.

It is of interest to note that the studies which supported the position that oral reading word accuracy will vary with reading compre-

⁸³Carolyn L. Burke, "A Psycholinguistic Description of Grammatical Re-Structuring in the Oral Reading of a Selected Group of Middle School Children" (unpublished Doctor's dissertation, Wayne State University, 1969), p. 3.

⁸⁴Ibid., p. 176.

⁸⁵Ibid.

hension involved comprehension measures in silent reading. Studies which failed to support the position, however, related word accuracy to comprehension performance in oral reading.

INVESTIGATIONS DEALING WITH THE RELATIONSHIPS BETWEEN READING COMPREHENSION AND THE SUBSTITUTION ERROR

A review of the literature dealing with the substitution error is important for several reasons. Paramount among these reasons is the high incidence the substitution error represents among the errors in oral reading considered. Swanson found that the substitution error constituted the largest single error category representing 30% of the errors for college subjects identified as poor silent readers.⁸⁶ In a study involving college freshmen identified as good or poor silent readers, Fairbanks found that the substitution error represented 30% of the total errors for the good readers and 42% of the total errors for the poor readers.⁸⁷

More recently Goodman and Burke found that the substitution miscue represented 46% of the miscues made by 12 fourth and fifth grade subjects identified as proficient readers.⁸⁸ However, as suggested by Allen ". . . to fully understand the relationship between comprehension and T.S.M.P.H.W. [total substitution miscues per hundred words] it is necessary to examine other kinds of relationships that the miscue has with the expected response."⁸⁹ One way in which the substitution miscue

⁸⁶Swanson, "Common Elements in Oral and Silent Reading," p. 46.

⁸⁷Fairbanks, "The Relation Between Eye-Movements and Voice," p. 94.

⁸⁸Goodman and Burke, op. cit.

⁸⁹Allen, op. cit., p. 30.

can be examined in greater depth is to analyze it in terms of its semantic acceptability. That is, the substitution can be examined in terms of how well it retains the context of the materials being read.

The present study advanced the position that the percentages of substitutions errors which are semantic will vary under conditions of careful reading, reading for specific purposes, and reading for a general purpose. However, because of the dirth of investigations addressed to this topic, a direct relationship between the percentages of semantic substitution errors and purposes for reading has not been firmly established. The rationale of the present study suggested that reading comprehension will vary with purposes for reading and that the percentages of semantic substitutions will vary in turn with reading comprehension. The following review of the literature, then, has been addressed to studies which shed some light on the relationship between reading comprehension and the types of substitution errors made while reading.

The early study by Fairbanks provided some insight as to how reading comprehension and oral reading substitutions are related. As part of a larger study, Fairbanks examined the oral reading errors made by both good and poor readers reading from the same materials. Subjects chosen for his study were college freshmen, twenty-three of whom had been identified as poor readers and twenty-five as good readers. Fairbanks found that "while 51 percent of the poor readers' substitutions seriously perverted the meaning, no substitution made by the superior group was of that type."⁹⁰

⁹⁰Fairbanks, op. cit., pp. 93-94.

Swanson conducted a similar examination involving university freshmen identified as either poor or good readers.⁹¹ The data from Swanson's study indicated that few errors made by good readers altered the meaning of the selection read. The errors made by poor readers, on the other hand, tended to significantly change the meaning of the selection.

More recently Goodman and Burke examined the oral reading miscues of 12 fourth and fifth grade subjects identified as proficient readers.⁹² It was noted that 46% of the miscues evidenced were substitution miscues. In examining the various miscues made by subjects, consideration was given to how acceptable they were semantically. That is, each of the miscues made by subjects was examined in terms of its relationship to the meaning of the passage being read, its relationship to the meaning of the passage prior to the occurrence of the miscue, its relationship to the meaning of the sentence in which it occurred, and its relationship to the meaning of that portion of the sentence following the miscue.

The researchers found that 61% of the miscues made by proficient readers did not affect the meaning of the passage being read. Sixteen percent of the miscues were semantically acceptable only to that portion of the passage prior to the occurrence of the miscue, while 7% of the miscues were semantically acceptable only at the sentence level. It was also noted that only one percent of the miscues were semantically acceptable to only that portion of the sentence following the miscue.

⁹¹Swanson, "Common Elements in Oral and Silent Reading."

⁹²Goodman and Burke, op. cit.

In comparing the 16% miscues which were semantically acceptable to prior meaning with the 1% which were acceptable to that portion of the sentence following the miscue, the researchers indicated that "This seems to point strongly to the fact that children [proficient readers] rely heavily on the past information provided in the material in their efforts at decoding."⁹³ The researchers further suggested that 85% of the miscues were partially or totally acceptable semantically and suggested that ". . . the figures support the fact that . . . [proficient] readers were reading for meaning and were making an attempt, even in miscues, to provide a semantically acceptable response."⁹⁴

In a more recent investigation, Allen found that second grade subjects made fewer miscues which altered meaning than did subjects from grades four and six. This, the researcher suggested, may have occurred because of the simplicity of the second grade materials. Furthermore, it was noted that only 10% of second grade miscues, 21% of fourth grade miscues and 15% of the miscues made by sixth grade subjects were not semantically acceptable in any way. In discussing this finding Allen suggested that "Children at all levels in the study exhibited an emphasis on and a need for meaning in their reading behavior."⁹⁵ In a further discussion of the semantic substitutions, he pointed out that ". . . the readers must be using cues other than graphic or phonemic ones to arrive at their miscues. Every miscue presents evidence of syntactic or semantic information being processed or

⁹³Ibid., p. 81.

⁹⁴Ibid.

⁹⁵Allen, "A Psycholinguistic Analysis of the Substitution Miscues of Selected Oral Readers," p. 122.

the utilization of both systems. A new and different surface structure has been generated from the meaning."⁹⁶

SUMMARY

Investigations reviewed in Chapter II were addressed to the following major areas: The relationships between oral and silent reading; the effects of purposes for reading on reading performance; the relationships between reading comprehension and oral reading word accuracy; and the relationships between reading comprehension and the substitution error.

Investigations designed to examine the relationships between oral and silent reading have indicated somewhat diverse findings. Eye-movement investigators have revealed positive correlations between the two forms of reading ranging from moderately high to low. In spite of the positive correlations obtained, it was noted that there were differences between the two forms of reading. It was observed that, in comparison to silent reading, oral reading was accompanied by a larger number of regressions, a smaller recognition span, and a slower reading rate. Additional insight into the relationships between oral and silent reading has been provided through investigations dealing with implicit speech. Recent investigation has suggested that implicit speech may be a normal aspect of reading employed to enhance comprehension of materials being read. Such investigation tended to support the position that oral and silent reading may demonstrate closer relationships as the requirements for comprehension become more demanding. Studies which examined

⁹⁶Ibid., p. 130.

subjects' reading comprehension in oral and silent reading also produced findings which were somewhat diverse. Superior reading comprehension was realized under both oral and silent reading conditions.

An examination of the literature has revealed a number of studies designed to examine the effectiveness of purposes for reading. Earlier investigations on the topic tended to support the effectiveness of reading for purposes as opposed to reading without stated purposes in mind (careful reading). More recent investigation, however, has tended to support the effectiveness of careful reading as opposed to reading with a stated purpose in mind. It has been observed that subjects reading under careful reading conditions demonstrated their best performance on the over-all content of a passage while subjects reading for a stated purpose demonstrated their best performance on test-specific content. Moreover, investigations designed to examine the effectiveness of general and specific purposes have failed to clearly support one type of purpose above the other. In addition, when the effectiveness of specific and general purposes was compared with that of careful reading, subjects reading under careful reading conditions tended to demonstrate better over-all performance in comprehension.

The present review of the literature offered strong but not conclusive support for the position that oral reading word accuracy will vary with one's comprehension of materials read. Investigations which compared the word accuracy of poor readers with that of good readers found that poor readers made a substantially larger number of errors than did the good readers. In addition, correlations between silent reading comprehension and oral reading performance have ranged as high

as .91. Recent studies, however, have indicated little relationship between reading comprehension and word accuracy. Moreover, in a study involving sixth grade subjects, it was observed that subjects who demonstrated the poorest oral reading word accuracy also demonstrated the best reading comprehension.

The present review of the literature offered support for the position that the percentages of substitutions which retain context will vary with the comprehension of materials read. In studies involving poor and good readers it was found that the substitutions made by poor readers tended to alter meaning while those of good readers did not. In a more recent investigation it was observed that the substitution miscue represented 46% of the total miscues evidenced by proficient readers. On closer inspection it was observed that 85% of the total miscues noted were partially or totally acceptable semantically. In a similar study it was observed that from 79% to 90% of the miscues evidenced by average second, fourth, and sixth grade subjects were totally or partially acceptable semantically.

CHAPTER III

PROCEDURES FOR THE STUDY

The following is a description of the procedures used in the present study. These procedures included the following: selection and description of the sample; the testing techniques; collection of the data; instrumentation; analysis of the data; stability over time; and inter-rater reliability.

SELECTION AND DESCRIPTION OF THE SAMPLE

To obtain data for the study, forty-five third and forty-five sixth grade subjects were randomly selected from a population of 150 students in two elementary schools. The size of the sample chosen for the study was determined by consulting the "Sample Size Table"¹ appropriate for analysis of variance and selecting the figure suggested for a power of .90 and an alpha level of .05.

The two elementary schools from which the sample was selected were the Jessup Elementary School and the Pershing Hill Elementary School, both of which are located in northwestern Anne Arundel County, Maryland, and both of which are suburban to the metropolitan areas of Washington, D. C., and Baltimore, Maryland. The area from which Jessup Elementary School drew its students was identified as having a high concentration

¹Jacob Cohen, Statistical Power Analysis for the Behavioral Sciences (New York: Academic Press, 1969), p. 377.

of low-income families. At the time of testing the school was receiving Federal assistance for the educationally deprived through Title I of the Elementary and Secondary Education Act of 1965. The area from which Pershing Hill Elementary School drew its students was characterized as having a large number of middle-income families. Many of the families in the school area were employed in governmental occupations at a nearby military base.

Twenty-three of the ninety subjects involved in the study were selected from the Jessup Elementary School. Twelve of these were selected from third grade and eleven were selected from sixth grade. Reading achievement of the third grade subjects as measured by the Reading Comprehension subtest of the Iowa Test of Basic Skills ranged from a low of 2.4 to 3.6. The mean reading achievement of third grade subjects was 3.1. The reading achievement of sixth grade subjects from Jessup Elementary School ranged from a low of 5.2 to a high of 7.2 with 6.2 as the mean reading achievement. Sixty-seven of the ninety subjects involved in the study were selected from the Pershing Hill Elementary School. Thirty-three of these were selected from third grade and thirty-four from the sixth grade. Reading achievement of third grade subjects ranged from 2.4 to 3.9 with a mean of 3.2. Reading achievement of the sixth grade subjects from Pershing Hill Elementary School ranged from 5.1 to 7.2 with a mean of 6.3. Reading performance of all third graders ranged from 2.4 to 3.9 with a mean of 3.2. Performance of all sixth graders ranged from 5.1 to 7.2 with a mean of 6.3. Forty-four of the subjects selected for the study were females. Twenty-three of these were third graders and the remaining twenty-one were sixth graders. Forty-six

of the subjects chosen for the study were males, twenty-two of whom were third graders and twenty-four of whom were sixth graders.

Excluded from the study were students identified by examination of the cumulative records as having speech impediments or as being mentally retarded (I.Q. 70 or below) and students whose reading performance as measured by a fall administration of the Comprehension subtest of the Iowa Test of Basic Skills (1955-1956) did not place them in the second or third quartile of the normative population.

Each of the ninety subjects chosen for the study was randomly assigned to one of three groups. Each of the three testing techniques used in the study was in turn randomly assigned to the three groups. Data from the Comprehension subtest of the Iowa Test of Basic Skills were analyzed to determine if there were differences in reading performance between the three groups. A one-way analysis of variance at a .05 significance criterion was used for this analysis.² An analysis of these data indicated that group differences in reading achievement were not beyond the levels expected by chance. Treatment group means, standard deviations, and an analysis of variance summary table for treatment group performance on the Reading Comprehension subtest of the Iowa Test of Basic Skills are presented in Table I.

TESTING TECHNIQUES

This study involved the use of three different testing techniques in the administration of the Gilmore Oral Reading Test, Form A.³ The

²Allen L. Edwards, Statistical Analysis (2nd ed.; New York: Holt, Rinehart and Winston, 1967), pp. 257-273.

³John V. Gilmore, Gilmore Oral Reading Test, Form A (New York: Harcourt, Brace and World, Inc., 1951).

TABLE I

Group Means, Standard Deviations, and Analysis of Variance Summary Table for Subjects'
Performance on the Comprehension Subtest of the Iowa Test of Basic Skills
(Scores Are in Grade Equivalents)

Group	Treatment 1		Treatment 2		Treatment 3		Source of Variance ^a	df	ms	F
	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>	<u>Mean</u>	<u>S.D.</u>				
Third Graders	3.13	.55	3.23	.41	3.14	.51	Between Groups	2	.0507	.2062
							Within Groups	42	.2457	
Sixth Graders	6.17	.82	6.30	.65	6.37	.70	Between Groups	2	.1647	.3101
							Within Groups	42	.5310	

^aThe assumption of homogeneity of variance was supported at the .05 level of significance.

three different testing techniques are identified as Technique 1, "Careful Reading"; Technique 2, "Reading for Specific Purposes"; and Technique 3, "Reading for General Purposes". Prior to the application of the three testing techniques all subjects received the same preliminary instructions. Such instructions involved telling subjects that they were to read materials orally and that their reading was simply to help the examiner better understand how children read. Subjects were also advised that their reading was being recorded on audio tape to help the examiner better remember how they read. Then in the manner suggested by the Gilmore Oral Reading Test: Manual of Directions, each individual subject was instructed as follows:

"Let us look at this picture.' (Long pause.) Then say: 'Here we see Father and Mother, a boy and a girl, and a dog and a cat.' (Pause.)"⁴ Following these preliminary directions each subject was instructed in the manner prescribed for the testing technique assigned.

Technique 1: Careful Reading

Subjects to whom Technique 1 had been assigned received the remainder of the instructions in the manner suggested by the Gilmore Oral Reading Test. These instructions were as follows:

"Read carefully, for when you have finished each story, I am going to ask you questions about it."⁵

Technique 2: Specific Purposes

Subjects to whom Technique 2 had been assigned were instructed prior to each passage to read for two specific purposes supplied orally

⁴John V. Gilmore, Gilmore Oral Reading Test: Manual of Directions (New York: Harcourt, Brace, and World, 1952), p. 7.

⁵Ibid.

by the examiner. The instructions were as follows:

"Read to find out _____ and _____. "6

Technique 3: General Purposes

Subjects to whom Technique 3 had been assigned were instructed prior to each story to read for one general purpose supplied orally by the examiner. The instructions were as follows:

"Read to find out _____. "7

At the conclusion of reading each passage, subjects in each of the three groups were asked the five questions which were provided in the Gilmore Oral Reading Test for the respective passage.

Development of Specific and General Purposes for Reading

A five member panel consisting of two university professors and three doctoral students assisted in the selection of the specific and general purposes used in the study. Each panel member was provided with a check list containing specific and general purposes developed for each of the ten passages of the Gilmore Oral Reading Test Form A. Panel members were instructed to examine each of the purposes provided on the checklist and to indicate by checking yes or no for those purposes which did or did not conform to the definition and criteria established. A sample of the checklist used by panel members can be found in Appendix A.

The arbitrary criterion of 80% agreement by panel members was established as the cut-off for inclusion of purposes in the study. Two

⁶The specific purposes used for each of the ten passages are presented in Appendix B.

⁷The general purposes used for each of the ten passages are presented in Appendix B.

specific and one general purpose was needed for each of the ten passages of the test. When an 80% or better agreement was reached for more purposes than the number necessary, the purposes were placed in a pool from which those to be included in the study were randomly selected. A summary of panel members' ratings of the passages can be found in Appendix C.

COLLECTION OF THE DATA

The data for this study were collected by having three groups of subjects read orally in response to three different testing techniques. The materials read orally were the appropriate passages selected from the Gilmore Oral Reading Test, Form A. Suggestions appearing in the Gilmore Oral Reading Test: Manual of Directions as to where testing should begin and end were uniformly followed for subjects in each of the three groups. During testing, subjects' oral reading word accuracy, comprehension, and rate were noted and recorded on the Gilmore Oral Reading Test, Form A Record Blank.⁸ At the conclusion of testing, a record was also made of the substitutions which were semantic and nonsemantic. Performance in oral reading word accuracy, comprehension, and rate was determined uniformly for all subjects in the manner suggested by the Gilmore Oral Reading Test: Manual of Directions.⁹ A determination of the percentages of substitutions which were semantic was made by identifying semantic substitutions on passages from the basal level up to but not including the ceiling level.

⁸John V. Gilmore, Gilmore Oral Reading Test, Form A Record Blank (New York: Harcourt, Brace and World, 1951).

⁹Gilmore, Gilmore Oral Reading Test: Manual of Directions, p. 13.

In collecting data for this study, subjects were individually removed from the classroom and taken to a testing area which was free from outside interference. The order in which subjects were tested was determined at random. To retain an original record of subjects' oral reading and to provide data which could be reexamined to assure accuracy, each subject's oral reading was recorded on audio tape.

INSTRUMENTATION

The design of the present study required the use of treatment groups identified as being approximately equal in mean reading achievement. In addition, the requirements of the study called for the exclusion of pupils identified as being at the extremes of reading achievement. Data from the Reading Comprehension subtest of the Iowa Test of Basic Skills, administered by the Anne Arundel County Board of Education provided a convenient means of satisfying these design requirements.

Iowa Test of Basic Skills

The Reading Comprehension subtest of the Iowa Test of Basic Skills is part of a larger test battery designed to measure vocabulary, reading comprehension, language skills, work-study skills, and arithmetic skills. The materials included in the Comprehension subtest were chosen to represent a variety of reading sources encountered in everyday reading. The sources from which materials were developed included newspapers, magazines, encyclopedias, text books, governmental publications, and literary works. The reading task involved in reading the materials chosen was identified as being a complex one. Test items included in the measure placed major emphasis on reading for understanding and making inferences

from the materials. The skills involved in the various test items included reading for detailed knowledge, reading to ascertain the main idea, reading to note the organization, and reading to evaluate the selections.

Measures of reliability for the Reading Comprehension subtest were obtained through the split halves method as well as through correlating equivalent forms of the test. Split halves reliability measures for the respective grade levels involved ranged from .90 to .91.¹⁰ Reliability measures for equivalent forms of the subtest, on the other hand, ranged from .83 to .84.¹¹

Estimates of test validity for the total battery were obtained from several sources. In 1958 performance data from an earlier administration of the Iowa Test of Basic Skills were correlated with three measures of scholastic achievement for university students. These three measures were identified as (a) composite scores on the Iowa Test of Educational Development administered in the twelfth grade; (b) high school grade point average; and (c) grade point average of the freshman year. The correlations obtained are presented in Table II.

In a later study eighth grade performance data from a previous administration of the Iowa Test of Basic Skills were correlated with five subsequent measures of scholastic achievement. These measures were identified as (a) tenth, eleventh, and twelfth grade performance on the Iowa Test of Educational Development; (b) performance on the

¹⁰E. F. Lindquist and A. N. Hieronymus, eds., Manual for Administrators, Supervisors, and Counselors: Iowa Tests of Basic Skills (New York: Houghton Mifflin Company, 1964), pp. 39-40.

¹¹*Ibid.*, pp. 43-44.

American College Test; (c) high school grade point average; and (d) first semester and first year college grade point averages. The correlations between these factors and performance on the Iowa Test of Basic Skills are presented in Table III.

TABLE II

Correlations Between Performance on the Iowa Test of Basic Skills and Measures of Scholastic Achievement¹²

		Grade 12 ITED Composite	H.S. G.P.A.	Freshman College G.P.A.		
	N	r	R	R	r	R
Grade 8	1076	.73	.74	.61	.48	.49
6	772	.76	.78	.59	.49	.51
4	581	.68	.72	.53	.42	.45

Gilmore Oral Reading Test

The present study advanced the position that performance in oral reading will vary with the purpose one has for reading. To test this hypothesis, measurements of oral reading performance were obtained under three different testing techniques identified as "careful reading", "reading for specific purposes", and "reading for general purposes". Form A of the Gilmore Oral Reading Test (1952) was selected as the instrument for use in obtaining these measures. This instrument was chosen because of its recognized value as a measure of oral reading performance.

The Gilmore Oral Reading Test was developed to provide educators with a means of measuring the oral reading performance of students in

¹²Lindquist and Hieronymus, op. cit., p. 47.

TABLE III

Correlations Between Performance on the Iowa Test of Basic Skills
and Measures of Scholastic Achievement¹³

		ITED Composite			High School Grade-Point Average	American College Test Composite	1st Semester College Grade-Point Average	1st Year College Grade-Point Average
		Gr. 10	Gr. 11	Gr. 12				
Grade 8								
ITBS	Obtained	.78	.77	.77	.59	.73	.40	.41
Composite	Corrected	.93	.92	.92	.82	.90	.65	.66

¹³Lindquist and Hieronymus, loc. cit.

grades 1 through 8. The various factors on which measures of performance are provided included oral reading comprehension, oral reading word accuracy, and oral reading rate. Performance ratings are supplied for each of these three factors, while standard scores and grade equivalents are supplied for comprehension and word accuracy. The test is comprised of ten paragraphs, each of which is more difficult than the preceding paragraph. In addition, there are five recall-type questions for each of the ten paragraphs. Each of the five questions is presented orally at the end of the passage for which it was developed.

Among the desirable features of this instrument are the speed and ease with which it can be administered. In most cases the test can be given in 15 to 20 minutes. Furthermore, directions for administering and scoring the test are sufficiently clear to require little special preparation on the part of the examiner.¹⁴

Evidence of validity for the Gilmore Oral Reading Test is derived from two sources. The first of these involved the manner in which the instrument was developed. Reading passages were constructed so as to resemble the type of reading involved in reading a book. That is, each of the separate passages was developed to represent a part of a continuous story. In addition, each of the passages was constructed to represent a different gradation in reading difficulty. Differences in reading difficulty were regulated through controlling the factors of vocabulary, sentence structure, and interest.

¹⁴Oscar Krisen Buros, ed., The Fifth Mental Measurement Yearbook (Highland Park, N. J.: The Gryphon Press, 1959), p. 767.

Evidence of test validity was presented statistically by comparing scores obtained on the Gilmore Oral Reading Test with those indicated on other oral reading measures. To obtain data of this nature, oral reading performance data from the Gilmore Oral Reading Test, from the Gray Standardized Oral Reading Paragraphs, and from the Durrell Analysis of Reading Difficulty were correlated using Pearson product-moment correlations. A summary of these correlations is presented in Table IV.

TABLE IV

Correlations between the Gilmore Oral Reading Test,
Form A, and Two Oral Reading Tests¹⁵

Tests	Accuracy	Comprehension	Rate
Gilmore--Gray	.77		.45
Gilmore--Durrell	.80	.59	.50
Gray--Durrell	.73		.39

Evidence of test reliability for the Gilmore Oral Reading Test was demonstrated in three ways. The first method of demonstrating test reliability involved correlating subjects' performance on Form A and Form B of the same measure. Reliability data were also evidenced for accuracy and comprehension through the use of the Kuder-Richardson reliability method. The third method of demonstrating test reliability involved presenting the standard errors of measurement for accuracy

¹⁵Gilmore, Gilmore Oral Reading Test: Manual of Directions,
p. 5.

and comprehension. A summary of reliability data from these three sources is presented in Table V.

TABLE V
Reliability Data for the Gilmore Oral Reading Test¹⁶

Grade	r_{AB}^a				N	r_{K-R}^b		S.E. Meas. ^c	
	N	Acc.	Comp.	Rate		Acc.	Comp.	Acc.	Comp.
2	24	.89	.68	.95	382	.88	.82	4.3	3.3
5	24	.85	.67	.72	219	.86	.78	4.7	3.0
7	24	.84	.52	.59	165	.89	.78	4.7	2.9

^a r_{AB} --Correlations of alternate forms.

^b r_{K-R} --Correlations obtained by Kuder-Richardson approximation formula.

^cS.E. Meas.--Standard Error of Measurement, using the formula $S.E. Meas. = \sigma \sqrt{1 - r_{K-R}}$ when σ = S.D. of score and r_{K-R} is Kuder-Richardson reliability coefficient. These standard errors are expressed in terms of raw scores.

ANALYSIS OF THE DATA

The data for this study were analyzed using a 2 x 3 analysis of variance design.¹⁷ The research hypotheses considered in making this analysis are as follows:

¹⁶Ibid., p. 20.

¹⁷Edwards, Statistical Analysis, pp. 274-292.

1. $H_0: u_1 = u_2 = u_3$ where u_1 is the mean accuracy score of treatment population 1; u_2 is the mean accuracy score of treatment population 2; and u_3 is the mean accuracy score of treatment population 3.

2. $H_0: u_1 = u_2 = u_3$ where u_1 is the mean oral reading comprehension score for treatment population 1; u_2 is the mean oral reading comprehension score for treatment population 2; and u_3 is the mean oral reading comprehension score for treatment population 3.

3. $H_0: u_1 = u_2 = u_3$ where u_1 is the mean number of words read per minute for treatment population 1; u_2 is the mean number of words read per minute for treatment population 2; and u_3 is the mean number of words read per minute for treatment population 3.

4. $H_0: u_1 = u_2 = u_3$ where u_1 is the mean percentage of semantic substitutions for treatment population 1; u_2 is the mean percentage of semantic substitutions for treatment population 2; and u_3 is the mean percentage of semantic substitutions for treatment population 3.¹⁸

The F test at an alpha level of .05 was used as the test of significance.

The analysis of variance was chosen for the present study because of its recognized value with investigations of this nature. The use of this statistical technique made it possible to summarize in a logical and appreciable way the mass of statistical data which characterized this study. Furthermore, the present study was designed to analyze four different aspects of oral reading performance at two different grade levels using three different testing techniques. Handled singularly such comparisons would involve making several different

¹⁸Ibid.

tests of significance. As pointed out by Fisher, the use of analysis of variance permits one to reduce to a common form all of these tests of significance.¹⁹ Still another value of analysis of variance is seen in its power as a method of statistical analysis. Such power is derived in large part from the desirable restrictions its use places on the design of a study.²⁰ The basic assumptions to be met when analysis of variance is to be used are as follows:

1. It is assumed that the observations within sets are independent. This assumption is met in the present study through the process of randomized sampling.

2. It is assumed that the population values within sets are normally distributed. As suggested by Guilford, only marked departures from normality constitute a serious threat to this assumption.²¹ In addition, it is recognized that subjects chosen for the study were randomly selected from a restricted population in which serious skewness would be unlikely. The above observations, then, suggest that departure of population values from normality will be minor and that any such departures will not seriously threaten the stated assumption.

3. It is assumed that the observations contributing to variance are additive. This assumption is met by using observations which are on interval scales. Word accuracy and reading comprehension were com-

¹⁹R. A. Fisher, Journal of the Royal Statistical Society Supplement (1934), p. 52, cited by Allen L. Edwards, Experimental Design in Psychological Research (Rev. ed.; New York: Holt, Rinehart and Winston, 1960), p. 118.

²⁰J. P. Guilford, Fundamental Statistics in Psychology and Education (4th ed.; New York: McGraw-Hill Book Co., 1965), pp. 300-301.

²¹Ibid., p. 301.

pared on the basis of grade placement scores. Reading rate was compared on the basis of average time in seconds. Semantic substitutions were compared on the basis of percentages.

4. It is assumed that variances within sets are equal. The following hypotheses are considered in making this assumption:

a. $H_0: \sigma_1^2 = \sigma_2^2 = \sigma_3^2$ where σ_1^2 is the variance of word accuracy scores of treatment population 1; σ_2^2 is the variance of word accuracy scores of treatment population 2; and σ_3^2 is the variance of word accuracy scores of treatment population 3.

b. $H_0: \sigma_1^2 = \sigma_2^2 = \sigma_3^2$ where σ_1^2 is the variance of oral reading comprehension scores for treatment population 1; σ_2^2 is the variance of oral reading comprehension scores for treatment population 2; and σ_3^2 is the variance of oral reading comprehension scores for treatment population 3.

c. $H_0: \sigma_1^2 = \sigma_2^2 = \sigma_3^2$ where σ_1^2 is the variance of average number of words read per minute for treatment population 1; σ_2^2 is the variance of average number of words read per minute for treatment population 2; and σ_3^2 is the variance of average number of words read per minute for treatment population 3.

d. $H_0: \sigma_1^2 = \sigma_2^2 = \sigma_3^2$ where σ_1^2 is the variance of the percentages of semantic substitutions for treatment population 1; σ_2^2 is the variance of the percentages of semantic substitutions for treatment population 2; and σ_3^2 is the variance of the percentages of semantic substitutions for treatment population 3.

The assumption of homogeneity of variance was supported at the .05 level of significance in all cases.

RELIABILITY

Stability Over Time

To determine the reliability of test results, thirty-five subjects were randomly selected and retested three weeks after their initial testing. Each subject chosen for retesting was tested on the same materials and received the same testing technique as used in the initial testing. Coefficients of stability²² were obtained on the dimensions of word accuracy, comprehension, reading rate, and percentages of substitutions which were semantic by correlating performance from the two administrations.

Inter-Rater Reliability

To obtain measures of inter-rater reliability on oral reading test performance the audio tapes of a randomly selected group of subjects were reexamined by two independent raters. A total of thirty subjects were selected for tape reexamination. Fifteen of these were selected from each of the two grade levels and five were selected from each of the three treatments. Measures of word accuracy, reading comprehension, rate, and percentages of semantic substitutions were computed for each subject. The oral reading measures computed by the independent raters were then correlated with those computed by the original rater.

Measures of inter-rater reliability were also computed to determine agreement on substitutions identified as being semantic. To determine such agreement the substitution records of thirty randomly selected

²²Joseph E. Hill and August Kerber, Models, Methods and Analytical Procedures in Educational Research (Detroit: Wayne State University Press, 1967), p. 62.

subjects were reexamined by two independent raters. Each rater was instructed to identify from among the substitutions examined those which conformed to the definition of semantic substitutions provided. In making such an identification the following two criteria were considered:

1. Did the substituted word represent the same part of speech as the stimulus word?
2. Was the substituted word consistent with the meaning of the passage?

An affirmative response to both criteria was necessary for a substitution to be considered semantic. To obtain measures of inter-rater reliability, the substitutions identified as being semantic or nonsemantic by the two independent raters were correlated with those identified as being semantic or nonsemantic by the original rater.

SUMMARY

To obtain data for the present study, forty-five third and forty-five sixth grade subjects were randomly selected from two elementary schools. Each of the ninety subjects chosen for the study was randomly assigned to one of three treatment groups. Data from the Reading Comprehension subtest of the Iowa Test of Basic Skills were analyzed to determine if there were differences in reading achievement between the three groups. An analysis of these data indicated that group differences in reading achievement were not beyond the level expected by chance. The three treatments involved in the present study were identified as:

Treatment 1: Careful reading,

Treatment 2: Reading for specific purposes,

Treatment 3: Reading for general purposes.

A five-member panel determined whether the general and specific purposes used in the study conformed to the definitions and criteria supplied for such purposes.

Each subject was requested to read orally in the manner dictated by the treatment group to which he had been assigned. The materials from which subjects read were the appropriate passages from Form A of the Gilmore Oral Reading Test (1952). To retain an original record of subjects' oral reading performance and to provide data which could be reexamined to assure accuracy, each subject's oral reading was recorded on audio tape. Measurements for oral reading word accuracy, comprehension, rate, and the percentages of semantic substitutions were computed for each subject. A 2 x 3 analysis of variance design was used to test for differential treatment effects.

Three weeks after the original testing, thirty-five randomly selected subjects were reexamined. Coefficients of stability were obtained on the dimensions of word accuracy, comprehension, rate, and percentages of semantic substitutions by correlating performance from the two administrations.

To obtain measures of inter-rater reliability on oral reading test performance the audio tapes of thirty randomly selected subjects were reexamined by two independent raters. The oral reading measures computed by the two independent raters were correlated with those computed by the original rater. To determine agreement on substitutions identified as being semantic or nonsemantic, the substitution records of thirty randomly selected subjects were reexamined by two independent raters. The substitutions identified as being semantic or nonsemantic by the independent raters were correlated with those identified by the original rater.

CHAPTER IV

FINDINGS

The present study was designed to investigate the relationships between three treatment conditions and performance in four dimensions of oral reading. The three treatment conditions employed in this study were identified as

Treatment 1. Careful reading;

Treatment 2. Reading for specific purposes; and

Treatment 3. Reading for general purposes.

The four oral reading dimensions on which comparisons were made were oral reading word accuracy, comprehension, rate, and percentages of semantic substitutions.

Form A of the Gilmore Oral Reading Test was used to examine subjects' performance in these four areas. Performance in oral reading word accuracy, comprehension, and rate were determined in the manner suggested by the Manual of Directions for the Gilmore Oral Reading Test. The percentage of substitutions which were semantic was determined by identifying those substitutions which both represented the same part of speech as the stimulus word and were consistent with the meaning of the passage. A percentage value was then computed by comparing the number of semantic substitutions with the total number of substitutions occurring from the basal level up to but not including the ceiling level.

A 2 x 3 analysis of variance design was selected to test the hypotheses considered in this study. An alpha level of .05 was used

to determine if observed differences were beyond the levels expected by chance.

The findings of this study are reported in the following order: Oral Reading Word Accuracy, Oral Reading Comprehension, Oral Reading Rate, Percentages of Substitutions, Stability Over Time, and Inter-Rater Reliability.

ORAL READING WORD ACCURACY

The present study advanced the position that performance in oral reading word accuracy would vary under three different treatment conditions. To this end the following hypothesis was examined:

There is a difference in oral reading word accuracy under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects.

The greatest mean reading performance in oral reading word accuracy for third graders was realized by subjects reading for specific purposes ($\bar{x} = 3.50$). Subjects reading under careful reading conditions demonstrated the next highest mean performance in oral reading word accuracy ($\bar{x} = 3.17$), while subjects reading for general purposes demonstrated the lowest mean performance in oral reading word accuracy ($\bar{x} = 3.16$).

The greatest mean reading performance in oral reading word accuracy for sixth graders was realized by subjects reading under careful reading conditions ($\bar{x} = 5.73$). Subjects reading for specific purposes demonstrated the next highest mean performance in oral reading word accuracy ($\bar{x} = 5.45$), while subjects reading for general purposes demon-

TABLE VI

Group Means and Analysis of Variance Summary
 Table for Oral Reading Word Accuracy
 (Scores Are in Grade Equivalents)

Group	Treatment 1	Treatment 2	Treatment 3	Source of Variation	df	ms	F
	<u>Mean</u>	<u>Mean</u>	<u>Mean</u>	Grade Levels	1	106.28	—
Third Graders	3.17	3.50	3.16	Treatment Groups	2	.91	.5245
Sixth Graders	5.73	5.45	5.17	Treatment Groups/Grade Levels	2	.85	.492
				Error	84	1.73	
				Total	89		

strated the lowest mean performance in oral reading word accuracy ($\bar{x} = 5.17$).

An F value of .524 was obtained for treatment effects. This F value was not significant at the .05 level. The F value obtained for assessing interaction effects between treatments and grade levels was .492. This F value was also not significant at the .05 level of significance. Treatment group means and an analysis of variance summary table for findings on word accuracy are presented in Table VI.

ORAL READING COMPREHENSION

The position has been taken that performance in oral reading comprehension would differ under the three different treatment conditions. In examining this position the following hypothesis was considered:

There is a difference in oral reading comprehension under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects.

The greatest mean performance in oral reading comprehension for third graders was realized by subjects reading for general purposes ($\bar{x} = 3.55$). Subjects reading under careful reading conditions and subjects reading for specific purposes demonstrated equal mean reading comprehension ($\bar{x} = 3.35$), at the next lowest level.

The greatest mean performance in oral reading comprehension for sixth graders was realized by subjects reading for general purposes ($\bar{x} = 6.31$). Subjects reading for specific purposes demonstrated the next highest mean performance in reading comprehension ($\bar{x} = 5.69$), while subjects reading under careful reading conditions demonstrated the lowest mean performance in oral reading comprehension ($\bar{x} = 5.33$).

TABLE VII

Group Means and Analysis of Variance Summary
 Table for Oral Reading Comprehension
 (Scores Are in Grade Equivalents)

Group	Treatment 1	Treatment 2	Treatment 3	Source of Variation	df	ms	F
				Grade Levels	1	125.32	—
	<u>Mean</u>	<u>Mean</u>	<u>Mean</u>	Treatment Groups	2	2.74	1.035
Third Graders	3.35	3.35	3.55	Treatment Groups/Grade Levels	2	1.14	.431
Sixth Graders	5.33	5.69	6.31	Error	84	2.65	
				Total	89		

An F value of 1.035 was obtained for treatment effects. This value was not significant at an alpha level of .05. The F value ($F = .431$) obtained for assessing interaction effects between treatments and grade levels was also not significant at the .05 level of significance. Treatment group means and an analysis of variance summary table for findings in oral reading comprehension are presented in Table VII.

ORAL READING RATE

This study posited that performance in reading rate would vary under the three different treatment conditions. The following hypothesis was examined:

There is a difference in oral reading rate under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects.

The fastest mean oral reading rate for third graders was realized by subjects reading for specific purposes ($\bar{x} = 107.60$ words per minute). Subjects reading for general purposes demonstrated the next slower mean oral reading rate ($\bar{x} = 103.20$ words per minute), while subjects reading under careful reading conditions demonstrated the slowest mean oral reading rate ($\bar{x} = 100.80$ words per minute).

The fastest mean oral reading rate for sixth graders was also realized by subjects reading for specific purposes ($\bar{x} = 143.20$ words per minute). Subjects reading under careful reading conditions demonstrated the next slower mean oral reading rate ($\bar{x} = 140.00$ words per minute), while subjects reading for general purposes demonstrated the slowest mean reading rate ($\bar{x} = 138.00$ words per minute).

TABLE VIII

Group Means and Analysis of Variance Summary
Table for Oral Reading Rate

Group	Treatment 1	Treatment 2	Treatment 3	Source of Variation	df	ms	F
	<u>Mean</u>	<u>Mean</u>	<u>Mean</u>	Grade Levels	1	30030.41	—
Third Graders	100.80	107.60	103.20	Treatment Groups	2	240.40	.4799
Sixth Graders	140.00	143.20	138.00	Treatment Groups/Grade Levels	2	41.05	.0819
				Error	84	500.91	
				Total	89		

An F value of .4799 was obtained for treatment effects on oral reading rate. This value was not significant at an alpha level of .05. An F value of .0819 was obtained for interaction effects between treatments and grade levels. This value was also not significant at a .05 level of significance. Treatment group means and an analysis of variance summary table for findings on oral reading rate are presented in Table VIII.

PERCENTAGES OF SEMANTIC SUBSTITUTIONS

The position advanced in the present study suggested that the percentages of substitutions which are semantic will vary under the three different treatment conditions. To this end the following hypothesis was examined:

There is a difference in the percentages of semantic substitutions under the treatments careful reading, reading for specific purposes, and reading for general purposes.

The largest mean percentage of semantic substitutions for third graders occurred under careful reading conditions ($\bar{x} = 31.47$). Subjects reading for specific purposes demonstrated the next smaller mean percentage of semantic substitutions ($\bar{x} = 28.73$), while subjects reading for general purposes demonstrated the lowest mean percentage of semantic substitutions ($\bar{x} = 23.00$).

The largest mean percentage of semantic substitutions for sixth graders was realized by subjects reading for specific purposes ($\bar{x} = 43.07$). Subjects reading under careful reading conditions demonstrated the next smaller mean percentage of semantic substitutions ($\bar{x} = 34.87$), while subjects reading for general purposes demonstrated the lowest mean percentage of semantic substitutions ($\bar{x} = 28.07$).

TABLE IX

Group Means and Analysis of Variance Summary Table
for Percentages of Semantic Substitutions

Group	Treatment 1	Treatment 2	Treatment 3	Sources of Variation	df	ms	F
	<u>Mean</u>	<u>Mean</u>	<u>Mean</u>	Grade Levels	1	1299.60	—
Third Graders	31.47	28.73	23.00	Treatment Groups	2	866.32	1.247
Sixth Graders	34.87	43.07	28.07	Treatment Groups/Grade Levels	2	260.24	.375
				Error	84	694.48	
				Total	89		

The F value obtained for treatment effects on percentages of semantic substitutions was 1.247. This value was not significant at an alpha level of .05. The F value obtained for interaction effects between treatments and grade levels was .375. This value was not significant at a .05 level of significance. Treatment group means and an analysis of variance summary table for findings on percentages of semantic substitutions are presented in Table IX.

STABILITY OVER TIME

Three weeks after the initial testing, thirty-five randomly selected subjects were retested. Each subject chosen for retesting was administered the same testing instrument under the same treatment condition used during the initial testing session. To obtain coefficients of stability, performance data from the retest session were correlated with performance data from the original testing session. The factors on which coefficients of stability were computed were oral reading word accuracy, comprehension, rate, and percentages of semantic substitutions.

Coefficients of stability for third graders on word accuracy ranged from a low of .80 (Treatment 1) to a high of .97 (Treatment 3). The median coefficient for third grade word accuracy was .81 (Treatment 2). For sixth graders word accuracy coefficients ranged from a low of .53 (Treatment 3) to a high of .94 (Treatment 1). The median coefficient, .88 for sixth grade word accuracy, was obtained under Treatment 2.

Correlation coefficients for third graders on comprehension ranged from a low of .19 (Treatment 2) to a high of .68 (Treatment 1). The median coefficient for third grade comprehension was .21 (Treatment 3). Coefficients on comprehension for sixth graders ranged from a low

of .20 (Treatment 1), to a high of .97 (Treatment 2). The median coefficient for sixth graders' comprehension was .33 (Treatment 3).

On the variable of reading rate for third graders, correlation coefficients ranged from a low of .50 (Treatment 2) to a high of .90 (Treatment 3). The median coefficient for third graders' reading rate was .66 (Treatment 1). For sixth graders, correlation coefficients involving rate ranged from a low of .09 (Treatment 3) to a high of .99 (Treatment 1). The median coefficient for sixth graders' rate was .94 (Treatment 2).

For third graders, correlation coefficients involving percentages of semantic substitutions ranged from a low of .01 (Treatment 1) to a high of .87 (Treatment 2). The median correlation coefficient for percentages of semantic substitutions was .04 (Treatment 3). Correlation coefficients on percentages of semantic substitutions for sixth graders ranged from a low of .39 (Treatment 3) to a high of .48 (Treatment 1). The median correlation coefficient for sixth graders' percentages of semantic substitutions was .47 (Treatment 2).

The correlations obtained for test-retest performance represented varying degrees of stability over time. The coefficients obtained for word accuracy were sufficiently high to permit considerable confidence in stability over time for all but sixth graders under Treatment 3. Similar high coefficients of stability for third graders were indicated for rate (Treatment 3) and percentages of semantic substitutions (Treatment 2). For sixth graders, additional correlations permitting considerable confidence in stability over time were those obtained for comprehension (Treatment 2) and rate (Treatments 1 and 2).

A somewhat lower level of confidence in stability over time was indicated by the moderate correlations obtained for third graders' comprehension (Treatment 1) and rate (Treatments 1 and 2). For sixth graders, correlations permitting only a moderate level of confidence were those obtained for word accuracy (Treatment 3) and percentages of semantic substitutions (Treatments 1 and 2).

Several of the correlations obtained were sufficiently small to indicate little or no stability over time. Correlations which indicated questionable stability for third graders were those obtained for comprehension (Treatments 2 and 3) and percentages of semantic substitutions (Treatments 1 and 3). For sixth graders correlations which indicated little or no stability over time were those obtained for comprehension (Treatments 1 and 3), rate (Treatment 3), and percentages of semantic substitutions (Treatment 3).

Coefficients obtained under Treatment 2 for sixth graders permitted the greatest confidence in stability over time when performance in word accuracy, comprehension, rate, and percentages of semantic substitutions were all considered. Moreover, coefficients obtained under Treatment 3 for sixth graders permitted the least confidence in stability over time when all four factors were considered. For third graders, coefficients obtained under Treatment 1 permitted the greatest confidence in stability over time when word accuracy, comprehension, and rate were considered. Coefficients obtained under the remaining treatments for both grade levels did not, however, indicate a discernable pattern of stability. Summaries of test-retest correlations for word accuracy, comprehension, rate, and percentages of semantic substitutions are presented in Tables X and XI.

TABLE X

Correlations of Original Test Data with Retest Data for Oral Reading Word Accuracy,
Comprehension, Rate, and Percentages of Semantic Substitutions (N = 20)

Grade 3

Treatment	Word Accuracy	Comprehension	Rate	Percentages of Semantic Substitutions
1 Careful Reading	.80	.68	.66	.01
2 Specific Purposes	.81	.19	.50	.88
3 General Purposes	.97	.21	.90	.04
Combined Groups	.80	.36	.63	.49

TABLE XI

Correlations of Original Test Data with Retest Data for Oral Reading Word Accuracy,
Comprehension, Rate, and Percentages of Semantic Substitutions (N = 15)

Grade 6

Treatment	Word Accuracy	Comprehension	Rate	Percentages of Semantic Substitutions
1 Careful Reading	.94	.20	.99	.48
2 Specific Purposes	.88	.97	.94	.47
3 General Purposes	.53	.33	.09	.39
Combined Groups	.72	.51	.73	.45

INTER-RATER RELIABILITY

Word Accuracy, Comprehension, Rate,
Percentages of Semantic Substitutions

Inter-rater reliability coefficients were obtained for oral reading word accuracy, comprehension, rate, and percentages of substitutions identified as being semantic. To obtain measures of inter-rater reliability, the audio tapes of a randomly selected group of subjects were reexamined by two independent raters. A total of thirty subjects were selected for tape reexamination. Measures of oral reading word accuracy, comprehension, rate, and percentages of semantic substitutions were computed by the two independent raters. The oral reading measures computed by the two independent raters were then correlated with those computed by the original rater.

An analysis of the coefficients obtained indicated very high inter-rater agreement. The correlations for word accuracy, comprehension, rate, and percentages of semantic substitutions ranged from unity to .94. Correlations of 1.00 were obtained on third graders' comprehension (Treatments 2 and 3), rate (Treatments 1 and 3), and percentages of semantic substitutions (Treatments 1 and 2), as well as on sixth graders' rate (Treatments 1 and 2) and percentages of semantic substitutions (Treatment 3). A correlation of .94 was obtained for third graders' rate (Treatment 2) and sixth graders' percentages of semantic substitutions (Treatment 2). All remaining correlations were .99. A summary of the correlations obtained is presented in Table XII.

TABLE XII

Inter-Rater Correlations for Oral Reading Word Accuracy, Comprehension,
Rate, and Percentages of Semantic Substitutions (N = 30)

	Treatment	Word Accuracy	Comprehension	Rate	Percentages of Semantic Substitutions
Third Graders	1 Careful Reading	.99	.99	1.00	1.00
	2 Specific Purposes	.99	1.00	.94	1.00
	3 General Purposes	.99	1.00	1.00	.99
	Combined Groups	.99	.99	.99	.99
Sixth Graders	1 Careful Reading	.99	.99	1.00	.99
	2 Specific Purposes	.99	.99	1.00	.94
	3 General Purposes	.99	.99	.99	1.00
	Combined Groups	.99	.98	.99	.97

Semantic Substitutions

Measures of inter-rater reliability were computed to determine agreement on substitutions identified as being semantic. To determine such agreement the substitution records of thirty randomly selected subjects were examined by two independent raters. Each rater was instructed to identify from among the substitutions examined those which conformed to the definition of semantic substitutions provided. In making such an identification the following two criteria were considered:

1. Did the substituted word represent the same part of speech as the stimulus word?
2. Was the substituted word consistent with the meaning of the passage?

An affirmative response to both questions was necessary for a substitution to be considered semantic.

To obtain measures of inter-rater reliability, the substitutions identified as being semantic or nonsemantic by the two independent raters were correlated with those identified as being semantic or nonsemantic by the original rater. The correlations obtained were .76 (rater 1) and .58 (rater 2).

SUMMARY

This study advanced the position that performance in oral reading word accuracy, comprehension, rate, and percentages of semantic substitutions would vary under three different testing techniques. The three treatment conditions employed in the study were identified as:

1. Careful reading,
2. Reading for specific purposes, and
3. Reading for general purposes.

A 2 x 3 analysis of variance design was selected to test for differential treatment effects. The F values obtained for differential treatment effects, as well as for interaction between treatments and grade level, were not significant at the .05 level of significance.

To obtain coefficients of stability, data from the original testing session were correlated with data secured three weeks after the original testing. The correlation coefficients obtained for test-retest performance represented varying degrees of stability over time. The obtained coefficients of stability ranged from .53 to .97 for word accuracy, from .19 to .97 for comprehension, from .09 to .99 for rate, and from .01 to .88 for percentages of semantic substitutions.

Measures of inter-rater reliability were also computed for the study. An examination of the coefficients computed indicated very high inter-rater reliability in the four dimensions of word accuracy, comprehension, rate, and percentages of semantic substitutions considered in this study. All of the correlation coefficients obtained fell between .94 and unity. Measures of inter-rater reliability were similarly computed to determine agreement on substitutions identified as being semantic. An examination of these coefficients also indicated moderately high inter-rater agreement. The coefficients obtained for the two independent raters were .76 (rater 1) and .58 (rater 2).

CHAPTER V

SUMMARY AND CONCLUSIONS

Authoritative opinion of long standing has recommended that purposes for reading be established prior to reading. The rationale for this position, as suggested by Stauffer, indicated that ". . . purposes or questions or set represent the directional and motivational influences that get a reader started, keep him on course, and produce the vigor and potency . . . to carry him through to the end."¹ In spite of the recommendations made and the rationale provided, current oral reading testing procedures typically have not involved reading for purposes established prior to reading. Furthermore, research designed to examine the effectiveness of purposeful reading has generally produced diverse findings. Moreover, research on the topic of purposes for reading has been addressed almost exclusively to the area of silent reading. To date not a single investigation has been found which clearly illustrated the effects of purposes for reading on oral reading performance.

The present study was designed to investigate the relationships between three testing techniques and performance in four dimensions of oral reading. To this end the following research hypotheses were examined:

¹Russell G. Stauffer, Teaching Reading as a Thinking Process (New York: Harper and Row, 1969), p. 24.

1. There is a difference in oral reading word accuracy under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth graders.

2. There is a difference in oral reading comprehension under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth graders.

3. There is a difference in oral reading rate under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth graders.

4. There is a difference in the percentages of semantic substitutions made under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth graders.

OVERVIEW OF THE DESIGN

To obtain data for this study, forty-five third grade and forty-five sixth grade subjects were randomly selected from two elementary schools in Anne Arundel County, Maryland. Each of the ninety subjects chosen for the study was then randomly assigned to one of three treatment groups. Data from the Reading Comprehension subtest of the Iowa Test of Basic Skills were analyzed to determine if pre-experimental reading performance between the three groups differed beyond the level expected by chance. An analysis of these data indicated that such differences were not significant at the .05 level of significance.

The three treatments employed in this study were identified as

Treatment 1: Careful reading, in which case subjects were given oral instructions to read carefully and were told that questions would be asked after reading.

Treatment 2: Reading for specific purposes, in which case two specific purposes were supplied orally by the examiner prior to the reading of each passage.

Treatment 3: Reading for general purposes, in which case one general purpose was supplied orally by the examiner prior to the reading of each passage.

Measures for oral reading word accuracy, comprehension, rate, and percentages of semantic substitutions were computed for subjects in each of the three treatment groups. A 2×3 analysis of variance design was selected to test for differential treatment effects as well as for interaction between treatments and grade levels. The F test at an alpha level of .05 was used to determine if obtained differences were beyond the level expected by chance.

To obtain coefficients of stability, performance data from the original testing session were correlated with retest data secured three weeks after the initial testing session. The factors on which coefficients of stability were computed were word accuracy, comprehension, rate, and percentages of semantic substitutions.

To obtain measures of inter-rater reliability, the audio tapes of thirty randomly selected subjects were reexamined by two independent raters. The oral reading scores computed by the two independent raters were correlated with those computed by the original rater. Measures of inter-rater reliability were also computed to determine agreement on substitutions identified as being semantic or nonsemantic. The substitutions identified as being semantic or nonsemantic by the independent raters were correlated with those identified as being semantic or nonsemantic by the original rater.

SUMMARY OF FINDINGS

The findings of the present study are summarized as follows:

1. There were no significant differences in mean oral reading word accuracy under the treatments careful reading, reading for specific purposes, or reading for general purposes for third and sixth grade subjects.
2. There were no significant differences in mean oral reading comprehension under the treatments careful reading, reading for specific purposes, or reading for general purposes for third and sixth grade subjects.
3. There were no significant differences in mean oral reading rate under the treatments careful reading, reading for specific purposes, or reading for general purposes for third and sixth grade subjects.
4. There were no significant differences in mean percentages of semantic substitutions made under the treatments careful reading, reading for specific purposes, or reading for general purposes for third and sixth grade subjects.

CONCLUSIONS

The conclusions of this study are stated as follows:

1. The research hypothesis that there is a difference in oral reading word accuracy under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects was not supported by this research.
2. The research hypothesis that there is a difference in oral reading comprehension under the treatments careful reading, reading for

specific purposes, and reading for general purposes for third and sixth grade subjects was not supported by this research.

3. The research hypothesis that there is a difference in oral reading rate under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects was not supported by this research.

4. The research hypothesis that there is a difference in percentages of semantic substitutions under the treatments careful reading, reading for specific purposes, and reading for general purposes for third and sixth grade subjects was not supported by this research.

DISCUSSION

An examination of the data from this study indicated that none of the four research hypotheses advanced was supported. There are a number of plausible explanations as to why differential treatment effects were not found. A discussion of several of these explanations is presented below.

1. The position can be taken that failure to find differential treatment effects was due to pre-experimental differences between the three groups employed in the study. The three groups chosen for the study, it can be suggested, may have represented significantly different levels of reading performance. In the presence of such differences the charge can be made that significant treatment effects were obtained, but that such effects were not apparent. Groups having lower reading performance, it can be contended, may have derived significant benefit from the treatment applied. Such treatment effects may have raised the lower achievement group's performance to a par with that of the other

group or groups. It is conceivable, then, that significant treatment effects were obtained but that such differences were not apparent.

However, the possibility that the three groups chosen for the study represented different levels of reading performance is unlikely for two reasons. First, subjects chosen for each group were selected at random. The use of random selection reduced the chance of any differences between the groups. Second, data from the Comprehension subtest of the Iowa Test of Basic Skills were analyzed to determine if there were differences in reading performance between the three groups. An analysis of these data indicated that group differences in reading performance were not beyond the levels expected by chance. Thus, the position that differential treatment effects were not found because of pre-experimental differences between treatment groups appears to be of questionable credibility.

2. It can also be suggested that differential treatment effects were not found because of the presence of type II error. Type II error is defined as the retention of the null hypothesis when in fact it is false. The probability of rejecting a null hypothesis when it should be rejected is commonly discussed as the power of the statistical test. The power of the statistical tests employed in this investigation was estimated to be .90.² It follows, then, that the probability of committing a type II error was .10. That is, there was a one in ten chance that the null hypotheses were retained when they should have been rejected. Thus, the position that differential treatment effects were

²Jacob Cohen, Statistical Power Analysis for the Behavioral Sciences (New York: Academic Press, 1969), p. 337.

not found because of type II error appears to lack credibility.

3. An additional reason as to why differential treatment effects were not obtained can be found in the contention that the testing instruments employed may have lacked sufficient reliability. The position can be made that unreliable measures tend to give inconsistent or variable assessments of reading performance. It follows that differential treatment effects not evidenced in one test administration may be found in a subsequent administration.

An examination of test-retest reliability coefficients for the present study suggested that the position of a lack of instrument reliability was not without foundation. The majority of coefficients obtained for word accuracy ranged from .97 to .81, and were sufficiently high to suggest a high degree of reliability. On the other hand, coefficients obtained for the other dimensions of oral reading performance ranged from .97 to .19 for comprehension, from .99 to .09 for rate, and from .88 to .01 for percentages of semantic substitutions. Many of the coefficients obtained for these latter dimensions of oral reading performance were sufficiently low to indicate questionable reliability.

The position advanced that differential treatment effects were not obtained because of low instrument reliability is of questionable credibility for performance involving word accuracy. However, many of the coefficients obtained for oral reading comprehension, rate, and percentages of semantic substitutions suggested that the position advanced on questionable instrument reliability must be given serious consideration.

4. The position can also be made that differential treatment effects were not found because the dimensions of oral reading considered

were not responsive to the experimental treatments employed. That is, performance in oral reading word accuracy, comprehension, rate, and percentages of semantic substitutions were not influenced or were not influenced differently by the treatments careful reading, reading for specific purposes, or reading for general purposes.

The rationale of the present study suggested that performance in oral reading comprehension would vary under the three treatment conditions considered and that oral reading word accuracy, rate, and the percentages of semantic substitutions would vary with reading comprehension. As previously indicated, this rationale was derived from investigations in the area of silent reading. Investigations designed to examine the relationships between oral and silent reading have suggested that the two forms of reading are in some respects dissimilar. Failure to find differential treatment effects in oral reading may be explicable on the basis of differences between oral and silent reading.

Perhaps one of the most important differences between these two forms of reading has to do with reading comprehension. In discussing this matter, Smith, Goodman, and Meredith pointed out that "Studies have shown that children tend to comprehend better when they read silently than when they read orally."³ It is logical to suggest that the apparently inferior comprehension characteristic of oral reading did not provide sufficient foundation for the treatments to be effective.

On a related theme the position can be advanced that differential treatment effects were not found because subjects were unable to adjust

³E. Brooks Smith, Kenneth S. Goodman, and Robert Meredith, Language and Thinking in the Elementary School (New York: Holt, Rinehart and Winston, 1970), p. 280.

their reading performance differently under conditions of careful reading, reading for specific purposes, and reading for general purposes. There are a number of plausible explanations for why subjects may have been unable to adjust their reading performance differently under the treatment conditions employed. The first of these has to do with the purpose for which one reads when reading orally. As indicated by Dechant, "Oral reading calls for interpreting to others; silent reading only to oneself."⁴ More specifically, Tinker pointed out that "The purpose of reading out loud is to communicate ideas to others. . . ."⁵

The position can be taken that requiring a subject to read orally presented as the major purpose of reading the communication of the ideas within a passage. It follows that requiring a subject to read for specific or general purposes would involve the apprehension of only selected aspects of a passage. While reading of this latter type may be possible in silent reading, the position can be taken that reading for general or specific purposes in oral reading represents a contradiction to the primary purpose of reading to communicate the materials found within a passage. Requiring a subject to read carefully, on the other hand, is quite consistent with the purpose of reading orally, as this is what must be done to communicate.

The findings of the present study did not preclude the possibility that one who reads orally cannot be selective in the purpose for which he reads. It is quite conceivable that subjects in all three

⁴Emerald V. Dechant, Improving the Teaching of Reading (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1964), p. 23.

⁵Miles A. Tinker, Teaching Elementary Reading (2nd ed.; New York: Appleton-Century-Crofts, Inc., 1962), p. 203.

treatment groups read in the manner best suited for communicating the meaning of a passage (careful reading) in spite of directions to read for specific or general purposes.

Another plausible explanation for why subjects may have been unable to vary their reading performance differently under the three treatment conditions has to do with their previous instruction. Recent investigation by Guszak indicated that a common classroom practice is to follow reading with a preponderate number of recall type questions. As indicated by that researcher, "Recall questions . . . [are] primarily concerned with the retrieval of small pieces of factual material"6 The suggestion can be made that pupils instructed in this manner will have developed a reading strategy which best enables them to read for factual type material. It follows that not knowing which questions will be asked after reading requires pupils to attend to a large amount of factual material found within a passage. The reading strategy best suited for this type of reading is, in all probability, one similar in many respects to careful reading. It can be suggested that pupils having developed such a single reading strategy may be unable to adjust their reading when an alternative strategy is called for. That is, pupils instructed only in how to read for the factual materials contained in a passage may employ that reading strategy regardless of the purpose given prior to reading.

⁶Frank J. Guszak, "Teachers' Questions and Levels of Reading Comprehension," The Evaluation of Children's Reading Achievement, Perspectives in Reading No. 8 (Newark, Delaware: International Reading Association, 1967), p. 98.

That this may be so was suggested by the investigation of Keislar in which two groups of subjects were trained to read for different purposes.⁷ One group was trained to expect main idea type questions, while the other group was trained to expect detail type questions. Part of the way through the study the types of questions used by the respective groups were switched. Keislar observed that most subjects experienced difficulty when presented with questions that differed from the type used for their instruction.

A further explanation for why differential treatment effects were not found involved the relationship between purposes given prior to reading and questions presented after reading. The testing instrument chosen for this investigation consisted of a series of reading passages, each of which was followed by five recall type questions. The position can be taken that subjects employed the reading strategy which was most productive in answering these questions. The specific purposes used in this study were constructed so as to relate to two of the questions asked after reading while the general purposes were constructed so as to relate to at least three of the five questions asked. It is conceivable that subjects reading for either of these two purposes should have been able to answer fewer questions than subjects reading under careful reading conditions. Moreover, it is quite possible that this was discovered by subjects after they had read the first passage. It follows that subjects who had been directed to read for specific or

⁷Evan R. Keislar, "Learning Sets in a Stimulus-Response View of Classroom Motivation," Paper read at American Educational Research Association Meeting, Atlantic City, Feb. 17, 1960. Cited in George D. Spache and Evelyn B. Spache, Reading in the Elementary School (2nd ed.; Boston: Allyn and Bacon, 1969), p. 28.

general purposes may have found the careful reading procedure to be sufficient for answering questions and consequently may have employed a careful reading strategy. Should this have been the case, one would have expected that performance for the three treatment groups would have differed on the first passage read. A cursory examination of comprehension performance on the first passages did not reveal a discernable difference for any of the three groups. However, it should be pointed out that the first passages read represented easy reading materials for most subjects and may not have been sufficiently difficult to evidence differences. Nevertheless, it is quite possible that subjects instructed to read for specific or general purposes found careful reading to be more productive and consequently employed that strategy.

Support for this position is offered by Smith, Goodman, and Meredith, who indicated that readers must have at their disposal information-processing strategies to enable them to reconstruct meaning from the printed symbols. The strategies developed will include "... general sampling strategies to select the most productive cues from all those available. . . ." ⁸ As pointed out by the authors, information-processing strategies are developed as children gain proficiency in reading. The restricted population from which subjects for this study were chosen suggests that a sizable number of proficient readers were included. It is logical to suggest, therefore, that these subjects chose as the most productive strategy careful reading in spite of directions to read for general or specific purposes.

⁸Smith, Goodman, and Meredith, Language and Thinking in the Elementary School, p. 231.

RECOMMENDATION FOR THEORY

There are at present a number of schemes available for classifying oral reading errors. In discussing these various classification schemes, Goodman pointed out that ". . . analysis of oral reading errors has been characterized by establishment of arbitrary, often non-parallel, and overlapping categories. . . ." ⁹ Moreover, Goodman indicated that much of the analysis of oral reading errors to date has been atheoretical. To counter this condition, Goodman has proposed a classification scheme for analyzing oral reading errors (miscues) built around a psycholinguistic theory of reading. The classification system proposed differs from previous classification systems in several ways. Perhaps two of the most important differences are found in the emphasis placed on understanding why errors occur and in the recognition that different errors may vary in their importance. It is recommended, therefore, that a classification scheme such as that proposed by Goodman be used to reexamine the effects of the three treatments employed in this study.

RECOMMENDATION FOR DIAGNOSIS

Investigations in the area of silent reading have revealed a distinct tendency for silent reading performance to vary under treatment conditions similar to those employed in this study. In contrast to such investigations the present study evidenced little tendency for oral reading performance to vary under the treatment conditions employed. The failure of oral reading performance to vary in the manner observed for

⁹Kenneth S. Goodman, "Analysis of Oral Reading Miscues: Applied Psycholinguistics," Reading Research Quarterly, V, 1 (Fall, 1969), 11.

silent reading tends to suggest that the two forms of reading are in some respects dissimilar. It is, therefore, recommended that the diagnosis of pupils' strengths and weaknesses involve measures of both oral and silent reading performance.

RECOMMENDATION FOR TEACHING

Recent investigation has suggested that students not instructed in how to read for different purposes often experienced difficulty in adjusting their reading to meet different demands. One possible explanation for why differential treatment effects were not obtained in this study was that subjects did not have skill in reading for different purposes. It is recommended, therefore, that teachers place greater emphasis on teaching children how to read for different purposes.

RECOMMENDATIONS FOR RESEARCH

1. The data from the present investigation indicated that measures of comprehension, rate, and percentages of semantic substitutions were often characterized by low reliability. It is recommended that research be undertaken to develop measures of oral reading performance which have greater test-retest reliability.

2. The sample chosen for this study was restricted to third and sixth graders whose performance on a standardized test placed them in the second or third quartile of the normative population. It is possible that subjects from other grades and/or other performance levels may have reacted differently to the treatments employed in this investigation. A replication of the present study using subjects from other grade and performance levels is recommended.

3. There is considerable research data which suggested that oral and silent reading are somewhat dissimilar. The data from this study also suggested that oral and silent reading are somewhat dissimilar. The recommendation is made that investigations be undertaken to further examine the relationships between these two forms of reading. Special consideration should be given to identifying those factors in which a satisfactory generalization from oral reading to silent reading can be made.

4. Current oral reading testing practices typically involve the use of reading materials and purposes for reading supplied by an examiner. The present study failed to find differential treatment effects when materials and purposes for reading were supplied by an examiner. In a related discussion Smith, Goodman, and Meredith pointed out that for oral reading "Children should be encouraged to select stories or sections of books that they have particularly enjoyed and that they think will interest their classmates."¹⁰ The recommendation is made that investigation be undertaken to examine the effectiveness of using pupil-selected materials and pupil purposes for reading.

¹⁰Smith, Goodman, and Meredith, Language and Thinking in the Elementary School, p. 281.

APPENDIX A

SUPPLEMENTARY TABLES

TABLE XIII

Data for Subjects' Performance on the Comprehension Subtest
of the Iowa Test of Basic Skills

Subject	Grade Equivalent Score	Subject	Grade Equivalent Score	Subject	Grade Equivalent Score
C1	3.6	G31	2.8	S61	6.1
C2	3.0	G32	3.0	S62	6.7
C3	3.6	G33	3.3	S63	5.6
C4	2.7	G34	2.4	S64	5.3
C5	3.9	G35	3.0	S65	7.0
C6	3.6	G36	3.8	S66	5.9
C7	2.5	G37	3.8	S67	6.3
C8	2.4	G38	3.0	S68	6.7
C9	3.6	G39	2.4	S69	7.2
C10	2.5	C40	3.9	S70	5.7
C11	3.6	C41	3.2	S71	5.1
C12	2.5	C42	3.0	S72	6.8
C13	3.5	C43	3.4	S73	6.9
C14	2.5	C44	3.7	S74	6.8
C15	3.4	C45	2.4	S75	6.4
S16	2.7	C46	7.2	G76	5.2
S17	3.0	C47	7.1	G77	5.2
S18	3.2	C48	7.0	G78	5.7
S19	3.5	C49	5.2	G79	5.9
S20	3.2	C50	5.1	G80	5.8
S21	3.5	C51	5.4	G81	7.0
S22	3.6	C52	7.0	G82	7.1
S23	2.8	C53	5.4	G83	7.1
S24	3.0	C54	6.5	G84	6.8
S25	3.5	C55	6.6	G85	6.4
S26	2.4	C56	5.1	G86	5.9
S27	3.5	C57	6.4	G87	6.5
S28	3.0	C58	5.7	G88	7.1
S29	3.8	C59	5.7	G89	7.2
S30	3.8	C60	7.1	G90	6.7

Key:

- C = Subjects assigned to the Careful Reading Treatment.
 S = Subjects assigned to read for Specific Purposes.
 G = Subjects assigned to read for General Purposes.

TABLE XIV

Original Test Data for Oral Reading Word Accuracy, Comprehension,
Rate, and Percentages of Semantic Substitutions
for Subjects in Grade 3

Subject	Word Accuracy	Comprehension	Rate	Percentage of Semantic Substitutions
C1	3.7	5.3	78	75
C2	3.1	4.7	96	0
C3	4.1	3.0	78	43
C4	1.2	1.1	156	0
C5	5.1	4.3	72	17
C6	.9	1.9	102	0
C7	2.7	3.9	90	25
C8	3.1	2.0	96	43
C9	3.5	4.3	114	50
C10	2.9	4.3	66	25
C11	3.9	3.9	108	75
C12	3.3	2.0	120	0
C13	4.9	4.1	138	67
C14	2.1	2.2	108	27
C15	3.1	3.3	90	25
S16	3.5	2.2	132	33
S17	2.0	4.7	90	0
S18	3.5	2.0	120	75
S19	4.2	4.1	102	100
S20	2.8	2.8	90	40
S21	2.7	4.3	90	20
S22	4.5	4.7	90	12
S23	3.0	3.0	96	33

TABLE XIV (continued)

Subject	Word Accuracy	Comprehension	Rate	Percentage of Semantic Substitutions
S24	3.6	2.2	102	20
S25	4.3	4.3	120	17
S26	3.9	2.6	108	0
S27	3.7	4.1	132	0
S28	2.1	2.0	90	33
S29	5.0	4.3	102	23
S30	3.8	3.0	150	25
G31	2.2	4.7	102	60
G32	1.8	1.1	60	25
G33	3.5	2.6	120	20
G34	3.0	4.1	126	0
G35	2.1	3.2	66	20
G36	3.5	3.9	114	25
G37	4.3	5.3	108	25
G38	4.2	6.0	114	11
G39	3.9	3.0	102	0
G40	2.5	4.7	114	21
G41	3.4	3.3	78	0
G42	2.7	1.9	156	50
G43	2.2	4.3	96	27
G44	4.5	2.4	114	17
G45	3.6	2.8	78	44

Key:

- C = Subjects assigned to the Careful Reading Treatment.
 S = Subjects assigned to read for Specific Purposes.
 G = Subjects assigned to read for General Purposes.

TABLE XV

Original Test Data for Oral Reading Word Accuracy, Comprehension,
Rate, and Percentages of Semantic Substitutions
for Subjects in Grade 6

Subject	Word Accuracy	Comprehension	Rate	Percentage of Semantic Substitutions
C46	6.8	4.5	162	62
C47	6.4	6.8	108	14
C48	9.4	4.1	138	0
C49	4.4	4.1	162	40
C50	5.8	2.8	96	27
C51	4.7	5.3	102	60
C52	4.9	4.5	150	22
C53	3.7	5.3	126	0
C54	6.5	7.3	144	0
C55	5.2	6.0	132	80
C56	7.2	5.7	162	40
C57	5.2	5.1	138	67
C58	4.4	3.0	168	25
C59	4.4	5.7	180	57
C60	7.0	+9.8	132	29
S61	5.6	7.3	120	57
S62	3.6	5.7	120	75
S63	5.3	4.7	114	33
S64	3.9	3.3	162	67
S65	6.5	6.3	138	100
S66	4.5	3.3	156	17
S67	7.7	3.5	150	100
S68	9.4	4.9	168	0

TABLE XV (continued)

Subject	Word Accuracy	Comprehension	Rate	Percentage of Semantic Substitutions
S69	5.9	5.5	150	25
S70	5.5	7.3	150	83
S71	5.2	+9.8	126	33
S72	4.9	5.5	174	0
S73	4.5	6.3	162	0
S74	3.4	2.2	144	23
S75	5.9	+9.8	114	33
G76	2.1	4.9	84	36
G77	3.7	5.7	120	22
G78	3.9	4.5	120	0
G79	4.2	5.1	150	22
G80	7.2	6.8	150	75
G81	7.5	4.9	156	33
G82	5.9	6.8	150	0
G83	3.8	3.9	150	33
G84	6.4	+9.8	132	45
G85	4.3	5.7	144	37
G86	5.8	8.5	138	56
G87	4.3	4.7	156	0
G88	7.7	6.3	120	20
G89	4.1	7.3	156	42
G90	6.7	+9.8	144	0

Key:

- C = Subjects assigned to the Careful Reading Treatment.
 S = Subjects assigned to read for Specific Purposes.
 G = Subjects assigned to read for General Purposes.

TABLE XVI

Retest Data for Oral Reading Word Accuracy, Comprehension,
Rate, and Percentages of Semantic Substitutions
for Third and Sixth Grade Subjects

Subject	Word Accuracy	Comprehension	Rate	Percentage of Semantic Substitutions
C2	2.8	3.7	96	33
C4	2.3	3.0	120	50
C8	3.4	2.4	96	0
C9	3.6	4.3	120	75
C12	3.1	2.2	120	9
C13	4.5	3.2	132	18
C14	3.6	3.5	126	50
S16	3.2	5.1	156	33
S17	3.2	3.3	114	29
S19	3.9	4.3	120	100
S20	3.3	3.5	102	25
S26	3.8	2.4	72	20
S27	4.0	4.5	126	29
S28	2.1	2.4	102	40
S30	3.9	5.1	120	50
G33	3.4	3.5	126	43
G34	2.5	4.7	120	25
G35	1.9	2.0	72	0
G36	3.8	4.5	138	33
G44	4.7	4.7	114	0

TABLE XVI (continued)

Subject	Word Accuracy	Comprehension	Rate	Percentage of Semantic Substitutions
C47	+9.8	5.7	120	17
C57	4.7	8.5	144	67
C58	4.6	8.5	180	75
C60	+9.8	+9.8	144	0
S61	6.2	+9.8	120	33
S63	5.9	5.3	120	33
S70	5.8	+9.8	156	33
S72	4.5	6.0	198	17
S74	4.1	3.3	132	40
G77	4.6	5.7	114	36
G78	4.0	3.9	150	25
G82	5.0	+9.8	168	33
G84	5.6	+9.8	144	25
G87	6.8	+9.8	114	0
G90	7.2	6.8	144	0

Key:

- C = Subjects assigned to the Careful Reading Treatment.
 S = Subjects assigned to read for Specific Purposes.
 G = Subjects assigned to read for General Purposes.

TABLE XVII

Scores Obtained by Independent Rater for Inter-Rater
Reliability for Third Grade Subjects

Subject	Word Accuracy	Comprehension	Rate	Percentage of Semantic Substitutions
C5	5.2	4.3	72	17
C6	.9	1.9	102	0
C8	3.0	2.0	96	43
C12	3.3	1.7	120	0
C13	4.9	4.1	138	67
S17	2.0	4.7	90	0
S20	2.8	2.8	90	40
S21	2.7	4.3	96	20
S23	3.1	3.0	96	33
S26	3.9	2.6	108	0
G31	2.2	4.7	102	50
G32	1.8	1.1	60	20
G39	4.0	3.0	102	0
G41	3.5	3.3	78	0
G42	2.8	1.9	156	50

Key:

- C = Subjects assigned to the Careful Reading Treatment.
 S = Subjects assigned to read for Specific Purposes.
 G = Subjects assigned to read for General Purposes.

TABLE XVIII

Scores Obtained by Independent Rater for Inter-Rater
Reliability for Sixth Grade Subjects

Subject	Word Accuracy	Comprehension	Rate	Percentage of Semantic Substitutions
C46	6.7	4.5	162	56
C51	4.7	5.3	102	60
C53	3.7	5.3	126	0
C54	6.2	8.5	144	0
C59	4.4	5.7	180	57
S62	3.5	5.7	120	60
S65	6.4	6.0	138	100
S69	5.9	5.1	150	33
S71	4.9	+9.8	126	50
S75	6.0	+9.8	114	43
G76	2.1	4.9	90	36
G77	3.7	5.5	126	22
G78	3.9	4.5	120	0
G85	4.3	5.7	144	37
G89	7.0	+9.8	144	0

Key:

- C = Subjects assigned to the Careful Reading Treatment.
- S = Subjects assigned to read for Specific Purposes.
- G = Subjects assigned to read for General Purposes.

TABLE XIX

Original Data (A) and Inter-Rater Data (B) for Agreement on
Substitutions Identified as Being Semantic

Subject	A	B	Subject	A	B
C1	1	1		1	1
	1	1		1	2
	2	2		2	2
	1	1		2	2
				2	2
C5	2	2		2	2
	1	1		2	2
	2	2		2	2
	2	2		2	2
	2	1			
	2	2	S21	2	2
				2	2
C7	1	1		1	1
	2	2		2	1
	1	1		2	2
	2	2			
	2	1	S22	2	2
	2	2		1	2
	2	2		2	1
	2	2		2	2
				2	2
C13	2	2		2	2
	1	1		2	2
	1	1		2	2
C14	2	2	S26	2	2
	2	2		2	2
	1	1			

Key:

- C = Subjects assigned to the Careful Reading Treatment.
- S = Subjects assigned to read for Specific Purposes.
- G = Subjects assigned to read for General Purposes.
- 1 = Substitutions identified as being semantic.
- 2 = Substitutions identified as not being semantic.
- A = Original Rater.
- B = Independent Rater.

TABLE XIX (continued)

Subject	A	B	Subject	A	B
S27	2	2	G45	1	1
	2	2		1	1
				1	1
S29	2	2		2	2
	2	2		2	2
	2	2		1	1
	1	1		2	2
	2	2		2	2
	2	2		2	2
	1	2			
	2	2	C48	2	1
	2	2		2	2
	2	2		2	2
	1	2		2	2
	2	2			
	2	2	C54	2	2
				2	2
G34	2	2			
	2	2	C56	1	1
	2	2		1	1
	2	2		2	2
				2	2
G35	1	2		2	2
	2	1			
	2	2	C58	2	2
	2	2		2	2
	2	2		1	1
				2	2
G37	1	1			
	2	2	C60	2	2
	2	2		2	2
	2	2		2	2
				2	2
G43	2	2		2	2
	2	2		1	2
	1	1		1	1
	1	1			
	1	2	S62	1	2
	2	2		2	2
	2	2		1	1
	2	2		1	1
	2	2			
	2	2			
	2	2			

TABLE XIX (continued)

Subject	A	B	Subject	A	B
S63	2	2	G82	2	2
	2	2		2	2
	1	1		2	2
				2	2
S69	1	2	G85	1	2
	2	2		1	1
	2	2		2	2
	2	2		2	2
S74	2	2		2	2
	2	2		1	1
	2	2		2	2
	1	1		2	2
	2	1	G89	2	2
	2	2		2	2
	2	2		1	2
	1	1		1	2
	2	2		2	2
	2	2		1	1
	2	2		2	2
	1	1		1	1
				2	2
S75	2	2		2	1
	2	2		1	1
	1	1		2	2
	2	2	G90	2	1
	2	2		2	2
	1	1		2	2
G78	2	2		2	2
	2	2		2	2

APPENDIX B

SAMPLE CHECKLIST FOR IDENTIFYING SPECIFIC AND GENERAL
PURPOSES TO BE INCLUDED IN THE STUDY

Dear Panel Member:

The present investigation is designed to determine if certain aspects of oral reading performance vary under three different testing conditions. Two of the testing conditions involved in the investigation require that purposes for reading be stated by the examiner prior to the subject's reading of each passage. To facilitate replication of the study, it is desirable that the purposes used be so described as to permit other investigators to construct purposes having similar characteristics. Your assistance in performing the tasks on the accompanying checklist is requested, then, to assure that the purposes developed conform to the criteria specified and consequently to facilitate replication of the study.

Sincerely yours,

Gerald E. Stafford

CHECKLIST FOR EVALUATING GENERAL AND SPECIFIC PURPOSES

The following evaluation form is divided into four sections. Section one contains a series of steps which serve as directions to assist panel members in making the desired evaluation. Section two contains (A) the descriptions and criteria for the specific purposes; (B) the specific purposes developed by this examiner; and (C) the space provided for indicating which of the specific purposes provided do or do not conform to the criteria suggested. In like manner section three contains (A) the description and criteria for the general purposes; (B) the general purposes developed by this examiner; and (C) the space provided for indicating which of the general purposes do or do not conform to the criteria suggested. In section four the individual panel member is given the opportunity to affix his or her signature and to indicate his or her present position--doctoral student or instructor.

Section 1: Directions to Panel Members

The following suggested steps should all be applied to specific purposes (Section 2) before they are applied to general purposes (Section 3).

- Step 1: Read the description and criteria provided for the purpose being considered.
- Step 2: Read the purposes(s) provided for each individual passage and then the passage itself.
- Step 3: Indicate which of the purposes provided do or do not conform to the description and criteria provided by checking (✓)
- "Yes_____ the purpose being considered conforms to the description and criteria suggested", or

"No_____ the purpose being considered does not conform to the description and criteria suggested."

Section 2: Specific purposes for reading--description and criteria.

Description. The specific purposes considered are designed to request the examinee to read at a literal level of understanding to find specific answers. Such purposes involve reading for what Bloom refers to as 1:00 Knowledge.

Knowledge as defined here includes those behaviors and test situations which emphasize the remembering, either by recognition or recall, of ideas, material, or phenomena. . . . In the learning situation the student is expected to store in his mind certain information and the behavior expected later is the remembering of this information. Although some alterations may be expected in the material to be remembered, this is a relatively minor part of the behavior. . . .¹

More specifically, the purpose for reading presently considered conforms closely with reading for 1.12 Knowledge of Facts, i.e.:

Knowledge of dates, events, persons, places, etc. This may include very precise and specific information, such as the exact date of an event or the exact magnitude of a phenomenon. . . .

While it is recognized that knowledge is involved in the more complex major categories of the taxonomy . . . the knowledge category differs from the others in that remembering is the major psychological process involved here. . . .²

Furthermore, each such purpose is constructed so as to relate to an item specifically mentioned in the passage and to relate to one of the questions used in the comprehension evaluation. Also, of the two purposes used, one has been derived from the initial portion of the passage, the other from the latter portion of the passage.

¹Benjamin S. Bloom, ed., Taxonomy of Educational Objectives, Handbook 1, Cognitive Domain (New York: David McKay Co., Inc., 1956), p. 62.

²Ibid., pp. 65, 62.

Criteria. The following four criteria are to be used in evaluating the purposes provided. Only in the case of "Yes" responses to all four of the criteria should a "Yes" response be indicated next to any given purpose.

A. Does the purpose request the examinee to read at a literal level of understanding to find specific answers?

B. Does the purpose relate to an item specifically mentioned in the passage?

C. Does the purpose relate to one of the questions used in the comprehension evaluation?

D. Has one of the two purposes been derived from the initial portion of the passage and the other from the latter portion of the passage?

Specific purposes for

Passage 1

Read to find out

**Yes

**No

* A.1. what animal the boy has

2. what animal the boy is playing with

3. who is playing with the dog

4. what other child is in the story

5. who has a dog

B.6. where Mother is

7. who the man is

8. what Mother is doing

Passage 2

Read to find out

A.1. where the girl is

2. what the girl is doing

3. what the boy is doing

B.4. what the cat would like to do

5. what the girl is looking at

Passage 3

Read to find out

A.1. the name of the boy

2. the name of the boy's sister

*Items discussed under A are derived from the initial portion of the passage. Items discussed under B are derived from the latter portion of the passage.

**"Yes" rating indicates that the purpose provided conforms to the description and criteria given. "No" rating indicates that the purpose provided does not conform to the description and criteria given.

Yes

No

3. the color of the house they live in
4. where the house is
- B.5. what pets are in the passage
6. when the children will leave for school
7. where Father is going
8. what pets are there

Passage 4

Read to find out

- A.1. what Mother does as Father is leaving
2. what Mother does after Father has gone
3. when Bob and Jane help Mother
- B.4. how long Mother works in her garden
5. what Mother does after she has finished
her work indoors

Passage 5

Read to find out

- A.1. how Father gets to work
2. what time Father leaves the house for work
3. what Mother does for Father when it rains
4. on what floor Father works
- B.5. how Father helps the children when he is
home in the evenings
6. when Father plays games with the children

Passage 6

Read to find out

Yes

No

- A.1. what month Bob and Jane usually go to the
seashore
2. what almost every city family does during
the summer
3. what the family must do to reach the shore
- B.4. how long the trip takes
5. how summer vacations help Bob and Jane
6. what Bob and Jane do at the beach

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Passage 7

Read to find out

- A.1. what Bob and Jane play with when they
return from their vacation
2. in what month the clothing and school
equipment is bought
3. how Bob and Jane feel after the vacation
- B.4. what subject Jane will like
5. what grade Bob will be in
6. what musical instrument Bob plays

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Passage 8

Read to find out

- A.1. what Mother and Father are planning for
2. what factors will play a part in the careers
that Bob and Jane will choose
- B.3. what profession Mother and Father hope
the children will choose

_____	_____
_____	_____
_____	_____

Yes

No

5. what each individual can do to help in
the solution of problems in human
relations

Section 3: General purposes for reading--descriptions and criteria.

Description. The general purposes for reading are designed so as to request the examinee to read for the main idea or central theme of a passage. Such purposes conform closely to what Bloom refers to as 2.20

Interpretation. The reader must

. . . go beyond . . . [translating each of the major parts] of the communication to comprehend the relationships between its various parts, to reorder, or to rearrange it in his mind so as to secure some total view of what the communication contains and to relate it to his own fund of experiences and ideas. Interpretation also includes competence in recognizing the essentials and differentiating them from the less essential portions or from the relatively irrelevant aspects of the communication. . . .

The essential behavior in interpretation is that when given a communication the student can identify and comprehend the major ideas which are included in it as well as understand their inter-relationships.

Furthermore, the general purposes provided are designed to relate to content specifically mentioned in the passage and to relate to at least three of the five questions used in the comprehension evaluation.

Criteria. The following three criteria are to be used in evaluating the purposes provided. Only in the case of "Yes" responses to all three of the criteria should a "Yes" response be indicated next to any given purpose.

³Bloom, Taxonomy of Educational Objectives, p. 93.

A. Does the purpose request the examinee to read for the main idea or central theme of a passage?

B. Does the purpose relate to content specifically mentioned in the passage?

C. Does the purpose relate to at least three (60%) of the questions used in the comprehension evaluation?

General purposes for

Passage 1

Read to find out

- | | Yes | No |
|-----------------------------------------------|-------|-------|
| 1. who is in this family | _____ | _____ |
| 2. what you saw in the picture | _____ | _____ |
| 3. what this paragraph says about the picture | _____ | _____ |
| 4. what animals and people are in this family | _____ | _____ |
| 5. about the family and its pets | _____ | _____ |

Passage 2

Read to find out

- | | | |
|------------------------------------------------------------------------------|-------|-------|
| 1. how the boy and girl are playing | _____ | _____ |
| 2. about the time the boy and the girl
played with their pets | _____ | _____ |
| 3. what happens when the boy and girl have fun | _____ | _____ |
| 4. how the boy and girl have fun | _____ | _____ |
| 5. what happened when the children and their
pets played together one day | _____ | _____ |
| 6. what the boy and girl are doing | _____ | _____ |

Passage 3

Read to find out

- | | | |
|-------------------------------------------|-------|-------|
| 1. some things about the boy and the girl | _____ | _____ |
| 2. about where the boy and the girl live | _____ | _____ |
| 3. about the boy's and girl's pets | _____ | _____ |

Passage 4

Read to find out

- | | | |
|----------------------------------------|-------|-------|
| 1. what Mother does during the morning | _____ | _____ |
|----------------------------------------|-------|-------|

Yes

No

2. what Mother does during the day
3. what Mother does after everyone has gone
4. the things that Mother does after Father
has left

Passage 5

Read to find out

1. some things about Father
2. some things that Father does
3. about Father's work
4. about what Father does during the day

Passage 6

Read to find out

1. about what the family does during the summer
2. about the trip the family takes during the
summer
3. about the vacation the family takes

Passage 7

Read to find out

1. about what Bob and Jane will do after they
get back from the vacation
2. about what Bob and Jane have to look
forward to when they get back from
their vacation
3. about what Bob and Jane will be doing in
school

Yes

No

Passage 8

Read to find out

1. about what Mother and Father are planning
for Bob and Jane
2. about what Mother and Father would like
for Bob and Jane
3. about some of the things that the members
of this family would like
4. some of the things the family is thinking
for Bob's and Jane's future education
5. about plans Mother and Father have for the
future education of their children

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Passage 9

Read to find out

1. about Bob's and Jane's discussion of the
human mind
2. what Bob and Jane learned about the
differences between human beings and
animals
4. about Bob's and Jane's interest in the
study of man

_____	_____
_____	_____
_____	_____

Passage 10

Read to find out

1. about what Bob and Jane will study
2. about some of the things that Bob and
Jane will learn in college

_____	_____
_____	_____

Yes

No

3. about what Bob and Jane will learn when
studying about the human mind

Section 4: Signature and position of panel member.

Signature: _____

Position: _____

APPENDIX C

SUMMARY OF PANEL MEMBERS' RATINGS FROM CHECKLIST

SUMMARY OF EVALUATION BY PANEL MEMBERS FOR IDENTIFYING
PURPOSES WHICH DID OR DID NOT CONFORM TO THE
DEFINITION AND CRITERIA ESTABLISHED

Summary for Specific Purposes:

		<u>*Yes Responses</u>					<u>**No Responses</u>					<u>***Percent of Agreement</u>
		<u>Panel Members</u>					<u>Panel Members</u>					
Paragraph 1	Purposes	D1	B2	L13	P4	L5	D1	B2	L13	P4	L5	
	A.1.	✓	✓	✓	✓	✓						100%****
	2.			✓	✓	✓	✓	✓				60%
	3.			✓			✓	✓		✓	✓	20%
	4.		✓		✓		✓		✓		✓	40%
	5.	✓	✓	✓						✓	✓	60%
	B.6.	✓	✓	✓	✓	✓						100%
	7.	✓	✓	✓	✓	✓						100%****
	8.	✓						✓	✓	✓	✓	20%
Paragraph 2	Purposes											
	A.1.	✓	✓	✓	✓	✓						100%****
	2.	✓	✓						✓	✓	✓	40%
	3.	✓	✓		✓	✓			✓			80%
	B.4.	✓	✓	✓	✓	✓						100%
	5.	✓	✓	✓	✓	✓						100%****
Paragraph 3	Purposes											
	A.1.	✓	✓	✓	✓	✓						100%****
	2.	✓	✓	✓	✓	✓						100%

*The purpose does conform to the definition and criteria established.

**The purpose does not conform to the definition and criteria established.

***Percent agreeing that the purpose conforms to the definition and criteria established.

****Purposes selected for this study.

		<u>Yes Responses</u>					<u>No Responses</u>					<u>Percent of Agreement</u>
		<u>Panel Members</u>					<u>Panel Members</u>					
		D1	B2	Li3	P4	L5	D1	B2	Li3	P4	L5	
3.		✓	✓	✓						✓	✓	60%
4.		✓	✓	✓	✓	✓						100%
B.5.		✓	✓	✓	✓	✓						100%
6.		✓	✓	✓	✓	✓						100%
7.		✓	✓	✓						✓	✓	60%
8.		✓	✓	✓	✓	✓						100%****
Paragraph 4												
Purposes												
A.1.		✓	✓	✓	✓	✓						100%
2.		✓	✓		✓	✓			✓			80%
3.		✓	✓	✓	✓	✓						100%****
B.4.		✓	✓	✓	✓	✓						100%****
5.		✓	✓	✓	✓	✓						100%
Paragraph 5												
Purposes												
A.1.		✓	✓	✓						✓	✓	60%
2.		✓	✓	✓	✓	✓						100%****
3.		✓	✓	✓	✓	✓						100%
4.		✓	✓	✓	✓	✓						100%
B.5.		✓	✓	✓	✓	✓						100%
6.		✓	✓	✓	✓	✓						100%****
Paragraph 6												
Purposes												
A.1.		✓	✓	✓	✓	✓						100%****
2.		✓	✓	✓	✓	✓						100%
3.		✓	✓	✓	✓	✓						100%
B.4.		✓	✓	✓	✓	✓						100%****
5.		✓	✓	✓	✓	✓						100%
6.		✓	✓	✓						✓	✓	60%

Percent of
AgreementYes Responses
Panel MembersNo Responses
Panel Members

	D1	B2	L13	P4	L5	D1	B2	L13	P4	L5	
Paragraph 7											
Purposes											100%
A.1.	✓	✓	✓	✓	✓						100%****
2.	✓	✓	✓	✓	✓						40%
3.		✓	✓			✓			✓	✓	100%****
B.4.	✓	✓	✓	✓	✓						80%
5.	✓		✓	✓	✓		✓				100%
6.	✓	✓	✓	✓	✓						
Paragraph 8											
Purposes											100%****
A.1.	✓	✓	✓	✓	✓						60%
2.	✓	✓	✓						✓	✓	100%
B.3.	✓	✓	✓	✓	✓						100%****
4.	✓	✓	✓	✓	✓						100%
5.	✓	✓	✓	✓	✓						
Paragraph 9											
Purposes											100%
A.1.	✓	✓	✓	✓	✓						100%
2.	✓	✓	✓	✓	✓						100%****
3.	✓	✓	✓	✓	✓						100%
4.	✓	✓	✓	✓	✓						100%****
B.5.	✓	✓	✓	✓	✓						100%
6.	✓	✓	✓	✓	✓						
Paragraph 10											
Purposes											100%****
A.1.	✓	✓	✓	✓	✓						100%
2.	✓	✓	✓	✓	✓						100%
3.	✓	✓	✓	✓	✓						100%****
B.4.	✓	✓	✓	✓	✓						100%
5.	✓	✓	✓	✓	✓						

Percent of
AgreementYes ResponsesNo ResponsesPanel MembersPanel Members

Paragraph 6

Purposes

1.

2.

3.

Paragraph 7

Purposes

1.

2.

3.

Paragraph 8

Purposes

1.

2.

3.

4.

5.

Paragraph 9

Purposes

1.

2.

3.

4.

Paragraph 10

Purposes

1.

2.

3.

	D1	B2	Li3	P4	L5	D1	B2	Li3	P4	L5	
											60%
			✓	✓	✓	✓	✓				100%
	✓	✓	✓	✓	✓						100%****
	✓	✓	✓	✓	✓						
											80%****
	✓		✓	✓	✓		✓		✓		40%
			✓		✓	✓	✓				80%
		✓	✓	✓	✓	✓					
											60%
		✓	✓		✓				✓		40%
		✓	✓		✓	✓	✓			✓	60%
		✓		✓	✓	✓		✓			60%
	✓	✓	✓	✓	✓	✓					100%****
											100%****
	✓	✓	✓	✓	✓		✓	✓	✓	✓	20%
	✓							✓			80%
	✓	✓		✓	✓				✓		40%
			✓		✓	✓	✓				
											20%
							✓	✓	✓	✓	100%****
	✓										100%
	✓	✓	✓	✓	✓						
	✓	✓	✓	✓	✓						

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