CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

THE EFFECT OF SUPPLEMENTARY READING TECHNIQUES ON THE RATE AND COMPREHENSION OF UPPER GRADE ELEMENTARY STUDENTS

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

by

Linda Louise Guss

August, 1979
The Thesis of Linda Louise Guss is approved:

Dr. Walter Nelson

Dr. Grace Lee

Dr. Thomas C. Potter,
Committee Chairman

California State University, Northridge
August, 1979
ACKNOWLEDGMENTS

To thank and acknowledge the assistance of:

Dr. Thomas Potter, committee chairperson, for his guidance, patience, and the many hours he spent with me during the preparation of this thesis.

Dr. Walter Nelson, committee member, who gave me the foundation upon which this thesis was begun.

Dr. Grace Lee, committee member, for her suggestions in the planning and completion of this thesis.

Dr. James Foster, superintendent of Saugus Union School District, for his approval to use the school district.

Mr. James Dixon and Mr. Ted Blankenship, the two principals of the schools used in this study, for allowing me to use their schools.

The nine teachers from who participated in this study, whose cooperation and support made this study possible.

The 221 children, for their participation in this study.

My parents, for their patience and unfailing moral support.

My close friends, for their understanding and encouragement throughout this entire study.
Abstract

The purpose of this study was to determine whether selected supplementary reading techniques, the Controlled Reader and Sustained Silent Reading, increased the rate and comprehension of upper grade elementary students. In this 10 week study, a sample of 221 fifth and sixth graders were randomly assigned to one of the two experimental groups or to the control group. A pretest-posttest procedure was utilized. Two subtest of the Stanford Diagnostic Reading Test, Reading Comprehension and Rate of Reading, were used to measure reading achievement. Following the pretest, all three groups continued their regular classroom basal reading program. The two experimental groups, the Controlled Reader Group and the Sustained Silent Reading Group, substituted their non-basal related follow-up activities three times a week for one of the two supplementary techniques. The control group continued the non-basal related follow-up activities. All groups received equal amounts of reading instruction time. The \( t \) test for correlated data was applied to test hypotheses dealing with pretest and posttest mean scores within each group. The results indicated that all three groups made significant gains in reading comprehension and reading rate. The \( t \) test for
uncorrelated data was applied to test the hypotheses dealing with posttest mean scores between groups. The results indicated that the Controlled Reader Group made significant gains in reading rate. No group made significant gains in reading comprehension. Analysis of variance was used to test the differences between treatment groups, grade, and sex. The results indicated that the Controlled Reader Group and fifth graders made significant gains in reading rate. The Controlled Reader may be one way of increasing reading rate while maintaining comprehension for upper grade elementary students. However, the possibilities of the use of this technique have not been fully explored. Further investigation is necessary.
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>THE PROBLEM AND DEFINITION OF THE TERMS</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Statement of the Problem</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Limitations</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Null Hypotheses</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Definition of the Terms</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>REVIEW OF THE LITERATURE</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Introduction</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Rate and Comprehension</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Testing Rate and Comprehension</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Controlled Reader</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Sustained Silent Reading</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Summary</td>
<td>14</td>
</tr>
<tr>
<td>3.</td>
<td>DESIGN OF THE STUDY</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Sample</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Procedures and Data Collection</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Controlled Reader</td>
<td>17</td>
</tr>
</tbody>
</table>
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sustained Silent Reading</td>
<td>19</td>
</tr>
<tr>
<td>Control Group</td>
<td>20</td>
</tr>
<tr>
<td>Instrumentation</td>
<td>20</td>
</tr>
<tr>
<td>Methodological Assumptions</td>
<td>21</td>
</tr>
<tr>
<td>4. PRESENTATION AND ANALYSIS OF THE DATA</td>
<td>22</td>
</tr>
<tr>
<td>Treatment of the Data</td>
<td>22</td>
</tr>
<tr>
<td>Presentation of the Data</td>
<td>22</td>
</tr>
<tr>
<td>Additional Findings</td>
<td>38</td>
</tr>
<tr>
<td>5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS</td>
<td>50</td>
</tr>
<tr>
<td>Summary</td>
<td>50</td>
</tr>
<tr>
<td>Conclusions</td>
<td>52</td>
</tr>
<tr>
<td>Recommendations</td>
<td>54</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>56</td>
</tr>
<tr>
<td>APPENDIX</td>
<td>60</td>
</tr>
</tbody>
</table>
LIST OF TABLES

Table | Page
-----|-----
1 Reading Comprehension Pretest and Posttest Mean Scores for the Controlled Reader Group as Measured by the SDRT in Stanines | 23
2 Reading Comprehension Pretest and Posttest Scores for the SSR Group as Measured by the SDRT in Stanines | 25
3 Reading Comprehension Pretest and Posttest Mean Scores for the Control Group as Measured by the SDRT in Stanines | 26
4 A Comparison of Reading Comprehension Posttest Mean Scores Between the Controlled Reader Group and the SSR Group as Measured by the SDRT in Stanines | 28
5 A Comparison of Reading Comprehension Posttest Mean Scores Between the Controlled Reader Group and the Control Group as Measured on the SDRT in Stanines | 29
6 A Comparison of Reading Comprehension Posttest Mean Scores Between the SSR Group and the Control Group as Measured by the SDRT in Stanines | 30
7 Reading Rate Pretest and Posttest Mean Scores for the Controlled Reader Group as Measured |
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>9</td>
<td>33</td>
</tr>
<tr>
<td>10</td>
<td>35</td>
</tr>
<tr>
<td>11</td>
<td>36</td>
</tr>
<tr>
<td>12</td>
<td>37</td>
</tr>
<tr>
<td>13</td>
<td>39</td>
</tr>
<tr>
<td>14</td>
<td>40</td>
</tr>
</tbody>
</table>

8 Reading Rate Pretest and Posttest Mean Scores for the SSR Group as Measured by the SDRT in Stanines.

9 Reading Rate Pretest and Posttest Mean Scores for the Control Group as Measured by the SDRT in Stanines.

10 A Comparison of Reading Rate Posttest Mean Scores Between the Controlled Reader Group and the SSR Group as Measured by the SDRT in Stanines.

11 A Comparison of Reading Rate Posttest Mean Scores Between the Controlled Reader Group and the Control Group as Measured by the SDRT in Stanines.

12 A Comparison of Reading Rate Posttest Mean Scores Between the SSR Group and the Control Group as Measured by the SDRT in Stanines.

13 Pretest and Posttest Scores for Reading Comprehension and Reading Rate as Measured by the SDRT in Stanines.

14 Difference Scores Between Pretests and Posttests for Reading Comprehension and
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Rate by Treatment Groups in Stanines.</td>
<td>41</td>
</tr>
<tr>
<td>15 Analysis of Variance for Main Effect Pretest and Posttest Differences for Reading Comprehension by Treatment Group as Measured by the SDRT in Stanines.</td>
<td>42</td>
</tr>
<tr>
<td>16 Analysis of Variance for Main Effect Pretest and Posttest Differences for Rate of Reading by Treatment Groups as Measured by the SDRT in Stanines.</td>
<td>44</td>
</tr>
<tr>
<td>17 Analysis of Variance for Main Effect Pretest and Posttest Differences for Reading Comprehension by Grade as Measured by the SDRT in Stanines.</td>
<td>45</td>
</tr>
<tr>
<td>18 Analysis of Variance for Main Effect Pretest and Posttest Difference Scores for Reading Rate by Grade as Measured by the SDRT in Stanines.</td>
<td>46</td>
</tr>
<tr>
<td>19 Analysis of Variance for Main Effect Pretest and Posttest Differences for Reading Comprehension by Sex as measured by the SDRT in Stanines.</td>
<td>48</td>
</tr>
<tr>
<td>20 Analysis of Variance for Main Effect</td>
<td></td>
</tr>
<tr>
<td>Table</td>
<td>Page</td>
</tr>
<tr>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>Pretest and Posttest Differences for Reading Rate by Sex as Measured by the SDRT in Stanines.</td>
<td>49</td>
</tr>
</tbody>
</table>

**LIST OF TABLES**
Chapter 1

PROBLEM AND DEFINITION OF THE TERMS

Introduction

By the fourth grade, students with normal reading development are expected to have mastered word recognition skills and should be capable of processing several words at one time. Word by word reading, common in the primary grades, is being replaced by a more rapid rate which enables the reader to comprehend meaning from larger units of thought. The rapid reader is unhampered by having to concentrate on short units of recognition and is able to devote himself to thought interpretation. Comprehension and rate of reading become related aspects of the reading process (Huey, 1968).

The ability to read quickly has become an important asset. A literate adult in today's fast paced world goes through more reading material in a week than his great grandfather covered in one year. Therefore, an earlier emphasis on teaching elementary school children to read as rapidly and efficiently as they are capable may be advantageous (Harris, 1940).

Statement of the Problem

Improving the rate of reading needs consideration for upper grade elementary students. Because
reading programs are difficult to alter, supplementary techniques are an alternative method. The purpose of this study was to determine whether selected supplementary reading techniques, the Controlled Reader and Sustained Silent Reading, increased the rate and comprehension of upper grade elementary students.

Limitations

This was an experimental study in which two supplementary techniques, the Controlled Reader and Sustained Silent Reading, provided practice and not initial instruction. The two experimental groups, each using one of the supplementary techniques as treatments, and the control group maintained their regular teacher-directed reading program.

The subjects participating in the study were fifth and sixth grade students in a middle class suburban area in Southern California during the 1978-1979 school year. Two subtests of the Stanford Diagnostic Reading Test were given. A pretest and posttest procedure was used.

Null Hypotheses

$H_{01}$ There will be no significant difference between pretest and posttest mean scores of the Controlled Reader Group on the subtest of the Stanford Diagnostic Reading Test (SDRT) on Comprehension.
H0₂ There will be no significant difference between pretest and posttest mean scores of the Sustained Silent Reading Group (SSR) on the subtest of the SDRT on Comprehension.

H0₃ There will be no significant difference between pretest and posttest mean scores of the Control Group on the subtest of the SDRT on Comprehension.

H0₄ There will be no significant difference between posttest mean scores of the Controlled Reader Group and the SSR Group on the subtest of the SDRT on Comprehension.

H0₅ There will be no significant difference between posttest mean scores of the Controlled Reader Group and the Control Group on the subtest of the SDRT on Comprehension.

H0₆ There will be no significant difference between posttest mean scores of the SSR Group and the Control Group on the subtest of the SDRT on Comprehension.

H0₇ There will be no significant difference between pretest and posttest mean scores of the Controlled Reader Group on the subtest of the SDRT on Rate of Reading.

H0₈ There will be no significant difference between pretest and posttest mean scores of the SSR Group on the subtest of the SDRT on Rate of Reading.
HO_9 There will be no significant difference between pretest and posttest mean scores of the Control Group on the subtest of the SDRT on Rate of Reading.

HO_{10} There will be no significant difference between posttest mean scores of the Controlled Reader Group and the SSR Group on the subtest of the SDRT on Rate of Reading.

HO_{11} There will be no significant difference between posttest mean scores of the Controlled Reader Group and the Control Group on the subtest of the SDRT on Rate of Reading.

HO_{12} There will be no significant difference between posttest mean scores of the SSR Group and the Control Group on the subtest of the SDRT on Rate of Reading.

Definition of Terms

1. **Rate.** How much time the child requires to read the passage (Chall, 1961).

2. **Comprehension.** The ability to understand and answer questions on the material read (Chall, 1961).

3. **Controlled Reader.** (Educational Development Laboratories) A filmstrip projector equipped with a variable-spaced automatic drive. Special filmstrips are used to project connected material one line at a time. A moving slot travels from
left to right, uncovering words and covering them again at a rate speed set by the instructor (Harris, 1940).

4. Sustained Silent Reading. A time provided exclusively for students to read silently under conditions in which all present must read self-selected material (Oliver, 1971).

Summary

This chapter presented the problem of the effects of the Controlled Reader and Sustained Silent Reading as supplementary techniques on the rate and comprehension of reading on fifth and sixth grade students. Limitations, definitions or terms, and null hypotheses were introduced.
Chapter 2

REVIEW OF THE LITERATURE

Introduction

By fifth and sixth grade, students have gained sufficient control over the mechanics of reading to make substantial gains in rate and comprehension (N.B. Smith, 1961). This chapter discusses the literature related to rate and comprehension, the testing of rate and comprehension, and descriptions of research on the use of the Controlled Reader and the Sustained Silent Reading procedure.

Rate and Comprehension

Interest in increasing rate of reading was evident in the professional literature as early as the period 1920-1930. Studies then showed the possibilities of improving rate of reading in relatively short periods of time with gains in comprehension (Witty, 1959).

A point of view has developed that students should learn to vary their rates of reading according to their purpose for reading and the nature of the reading material (Harris, 1968). Factors that determine how rapidly one reads and how well one comprehends may be directly related to the physical characteristics of the material. Included are: the size of type, type style, finish of the paper, blackness and sharpness of print, size of
page, organization of page, and kinds of illustrations. Other less tangible factors that may affect rate and comprehension are: the clarity of writing, the field of knowledge from which the writing is drawn, the complexity of the author's style, the author's choice of words, and the kind of writing (poetry, narrative, etc.). Background experience and interest are also factors that relate the reader to the material (Shores, 1968, pp. 24-25). Jensen (1978) states that reading research has been interested in these less tangible factors only to a limited extent.

Is there a correlation between rate and comprehension? Shores (1968, pp. 28-29) states that when rate and comprehension are measured as they are in tests of general reading ability, there are positive correlations between reading rate and comprehension. However, also stated was that when the task became more difficult, either because of more difficult material or a more demanding concept load, or both of these, the relationship between rate and comprehension drops to one that could be explained by chance factors. Research by Tinker (1940) stated there is an intimate relationship between rate and comprehension when the textual material is within the reader's educational experience. Robinson (1940) came to similar conclusions.
in his research. He found the more difficult the material, the more it affects the rate of reading.

According to Frank Smith (1971), unless the reader reads fast enough, 200 words per minute or more, he is not going to comprehend what he is reading simply because his memory system will not be able to retain, organize, and store the fragmentary information in any efficient way. Shores (1968, p. 28) states that the "norms" of reading for relatively simple material with comprehension at 70 to 80 percent accuracy in getting main idea and simple facts during a single original reading indicate an average reading rate of about 200 to 300 words per minute for the upper grade elementary grader.

The National Assessment of Educational Progress (1972) revealed that America is a nation of slow readers. Reading comprehension is high according to the report, but the rates measured for the sample of 100,000 young people were much lower than expected.

Several researchers, McCracken in 1960, Schale in 1968, and Swalm in 1969 (in Kimberly, 1973) carried out successful studies in rate training for fifth and sixth graders. They have recommended that these grades begin rate training.

Miller (1973) summarizes previous research in
the statement that those who are concerned about the reading process advocate that good reading programs should emphasize rate with comprehension.

Rate with comprehension may lead to a greater freedom to develop curricular environment in which teachers can experiment with a variety of innovative materials and approaches in an attempt to change students' attitudes toward reading and to develop to an optimum, their individual potential in reading skills (p. 626).

The Testing of Rate and Comprehension

Few standardized tests for children include a measure of rate. Those that do measure comprehension and rate simultaneously are usually presented in a format of several short passages with multiple choice questions following each passage. Time limits are often imposed, and rate may be calculated as the number of questions answered correctly within the time limit (Corman, 1975). The reading literature abounds with criticisms of these tests. Some of the criticisms are:

1. The fact that when comprehension tests are timed, it decreases the validity of those tests as measures of comprehension. Comprehension becomes confused
with reading rate (Harris, 1940, p. 150).

2. Tests which insert comprehension questions into reading tests penalize the slow reader (Spache in Corman, 1975).

3. Stability of rate scores obtained over a very short time interval is doubtful. Tests which score rate as the number of questions answered correctly in a given time are confounding comprehension with rate and therefore do not give a valid measure of either ability (Harris, 1940, p. 151).

If a reading test is to yield a rate of reading score and a comprehension score, it should consist of a selection to be read and timed and afterwards, a comprehension test separate and untimed (Letson, 1958).

Controlled Reader

Making improvements in speed of reading began to gain popularity in the 1930-1940's. World War II with its interest in identifying rapidly moving planes and warships intensified the concern in cultivating rapid recognition of printed material (Witty, 1969).

Gradually, commercial companies made available devices. The main emphasis was the development of more rapid and efficient reading while at the same time retaining effective comprehension (Sperr, 1951).

The value of the instruments is that they motivate
attempts to read faster and they show a person how fast he can really read when he is forced to proceed at a rapid rate (N.B. Smith, 1961). Taylor (1972) states that the Controlled Reader stimulates students to move quickly over the reading material in an orderly fashion. Gains in comprehension and interpretation will probably be produced because it affects directional attack, orderly perception, organized assimilation, comes equipped with a library of material to enable the student to progress in small sequential steps.

Bottomly (1971) did research for the Spokane public schools. The results indicated that the major use of the Controlled Reader should be in boosting reading rate. It appeared to have a beneficial, if delayed, effect on reading comprehension. The Controlled Reader was found to have best results with average and above average readers.

Witham (1966) reported success with the Controlled Reader. He assigned three classes of eighth grade students to Controlled Reader lessons, three classes to teacher motivated rate drills, and three classes to a regular developmental language arts program. At the conclusion of the 10 week study, both experimental groups were significantly ahead of the control group. The Controlled Reader group was slightly ahead of the
motivated rate drill group.

A research study by McDowell (1964) compared the comprehension, rate and vocabulary gains of two classes of fifth graders. One group used the Controlled Reader and the other group a basal reader. According to the Gates Reading Test, there was no statistical difference between groups at the end of the program.

Tinker (1967) has three objections to the pacing devices. The first is that reading speed is increased for many but not all students. The second is that improved rate is not transferred to other types of reading material. The last is that the pacers (Controlled Reader included) are not successful with all students.

Gladys B. Moore (1979) states that the school with a limited budget can get good results without mechanical pacers. She also states that if funds are available, a mechanical device would probably be a good investment. It teaches the reader to perceive more words at each eye fixation and it serves also as motivation.

Nila Banton Smith (1961) states that several studies have been conducted in regard to the use of mechanical devices in teaching reading in elementary schools with mixed results. She says that few of these studies have involved a control group using some other method. Her question regarding mechanical devices is
whether the retention of the speed attained with such practice can be transferred to other reading situations, natural reading being one of these situations.

Sustained Silent Reading

Sustained Silent Reading (SSR) is a practice that provides students an opportunity to develop their own reading skills privately without fear of mistakes. It allows them to react to ideas found in print for extended periods of time (Mork, 1972). During SSR, the teacher, the students, and all other present must read. Each student selects the material he wishes to read and no reports or records are required (McCracken, 1971).

Harris (1962) states that one of the approaches for improving rate in a good reading program is to include a substantial amount of independent reading. It provides abundant practice on common words that comes from doing a large amount of easy, pleasureable reading. When children are excited and want to find out what is going to happen next, they tend to read as fast a rate as is comfortable for them.

According to Oliver (1971) reading skills are refined and extended when children are given time to practice reading in school under structured conditions. Mork (1972) states that reading is a skill and skill
requires practice. Much of the practice must be in putting all the skills together for practice in total performance.

In a study by Cason (Cason in N.B. Smith, 1960, p. 360), third grade students were divided into a specially prepared materials group, a metronoscope trained group, and a free library reading group. Results showed no significant difference in the groups.

Evan and Towner (1975) wanted to determine if SSR led to skill development equal or superior to that which is obtained from other practice activities and materials it often replaces. The results indicated that SSR as a form of practice was neither more nor less effective than a multi-material form of practice.

Swalm and Kling (1973) compared timed reading drills and free reading on the rate and comprehension of fifth and sixth graders. Posttest scores after 10 weeks of instruction showed the timed reading group gained in reading rate. In comprehension, the results showed no significance.

Summary

The literature reviewed in this chapter indicated that reading rate depends on the material being read. An increase in rate may not produce a decrease in comprehension when the material being read is not too difficult for the reader. When rate and comprehension
are being measured, they should probably be measured separately.

The literature revealed both positive and negative results for the use of Controlled Reader. The literature reviewed also suggested that when used as an experimental group, the Controlled Reader was used instead of the regular reading program. When this is done, it is difficult for transfer to other reading situations to occur. Research on Sustained Silent Reading indicated no significant difference is obtained when it is compared to other methods of practice.

This study treated the Controlled Reader and Sustained Silent Reading as supplementary techniques in addition to the subjects' regular reading program. It provided a comparison of two types of supplementary practice in their effect upon reading rate and comprehension.
Chapter 3

DESIGN OF THE STUDY

This experimental study investigated the effectiveness of supplementary reading techniques on increasing rate while maintaining comprehension on material that was not beyond the instructional level of the reader.

Sample

This sample consisted of 221 subjects attending schools located in the Santa Clarita Valley in Southern California. Treatment, grade, sex, pretest and post-test scores were the variables considered in this study. The subjects, from nine classrooms comprising all fifth and sixth graders from two schools, were assigned by a toss of the coin to either the Controlled Reader Group, the SSR Group, or the Control Group. Six of the classrooms were multi-graded fifth and sixth combinations. Three of the classrooms were multi-graded fourth and fifth combinations with only the fifth graders being involved in the study. There were 120 sixth graders (64 girls and 56 boys) and 101 fifth graders (50 girls and 51 boys). A computer was used to analyze the data.

Procedures and Data Collection

This study lasted 10 weeks. All groups continued their regular basal reading program. Each treatment
was implemented as it best fit into the teacher's time schedule. Once the time of implementation was established, it was set to insure consistency. Both treatments were conducted three times a week for thirty minutes. For the remaining two days, the subjects were involved with the kinds of activities normally included in the curriculum. Each group spent approximately 90 minutes daily reading, which included both formal and informal instruction.

All the teachers who participated in the study had been teaching for five years of more. They were randomly assigned to one of the treatment groups. The basal reading program was taught in the morning. The teachers attended a one hour training session given by the researcher.

The pretests and posttests were administered by classroom teachers during regular class sessions utilizing directions from the test manual. Tests were collected, graded and stanine scores recorded according to the conversion tables located in the test manual.

**Controlled Reader**

The Controlled Reader was used three times a week. Each session lasted about one-half hour. The three classes were divided into small groups according to reading ability as determined by basal reader place-
ment tests. These small groups were not firmly set and adjustments in the groups were constantly made for the subject's best placement. All lessons on the Controlled Reader were on the subjects' independent reading level. (See Appendix)

The teacher or aide met with the group or individual for each lesson beginning with a brief introduction of vocabulary. These were words that were in some instances, beyond the subject's sight word vocabulary. Next, the motivation section was read either silently or aloud to set a purpose for reading. Then the Controlled Reading, the story read on film with the Controlled Reader, was begun. It required approximately five minutes reading time. When the story was finished, 10 comprehension questions found in the workbook were answered. The comprehension questions dealt with recall of details and inference. The comprehension questions were immediately corrected by the aide and if the 70 percent scoring criterion was not achieved, a second reading was required. If 70 percent comprehension was not achieved the second time, the rate was dropped for the next Controlled Reading. When a subject achieved 80 percent comprehension or higher on two consecutive readings, rate was increased five words per minute. Each subject kept a personal progress chart in which
answers, rate, and comprehension percentages were recorded.

**Sustained Silent Reading**

The Sustained Silent Reading (SSR) Group participated as a total class. The class and the teacher began reading silently for 10 minutes each day for the first week, 15 minutes each day for the second week, and 20 minutes each day for the third week. The class read for 25 minutes three times a week for the fourth week and 30 minutes three times a week for the remainder of the study (See Definition of Terms). Other procedures for the group included:

1. Subjects were not required to complete books they were not interested in.
2. Subjects were assisted in selecting books on an "easy" independent reading level.
3. Before or after SSR, the teacher offered suggestions or helped students find books of interest.
4. Subjects brought favorite books from home and shared them with other subjects.
5. Subjects were told to read for enjoyment.
6. Subjects were told they were putting their reading skills into practice.
Control Group

The Control Group was given the pretest and told that they were a special group of students and that they were going to make outstanding progress in the area of reading for the next 10 weeks. They were tested again before Easter vacation.

The Control Group continued with their regular basal reading program as did the two experimental groups. Instead of participating in one of the supplementary techniques, they continued with non-basil related follow-up activities such as: Barnell-Loft, Reading for Understanding (RFU), SRA kits, and Readers Digest Skill Builders. These were follow-up activities that were generally used by all upper grade teachers to accompany the basal series.

Instrumentation

Two subtests of the Stanford Diagnostic Reading Test, 1968, (SDRT) were administered. The subject's performance on the SDRT was matched with the performance of those of equal grade level of the Stanford Achievement Test. Reliability of the Comprehension Test was more precise in the lower stanines than the higher stanine scores. An alternate forms reliability procedure was used for converting the Rate of Reading scores to stanines. Evidence on validity by various investi-
gators has been contradictory, though, the intercorrelations of the subtests that had been studied and the results achieved are satisfactory for purposes of this investigation. The Rate of Reading subtest indicating a fourth grade level offered multiple choice type answers. The reading rate score was based on the number of items attempted. The Comprehension subtest contained literal and inferential comprehension questions (Buros, 1972).

Methodological Assumptions

It was assumed that variables related to classroom environment and teacher personality would not significantly affect the results of the study. Students already participating in a Learning Disabilities Grouping program or students enrolled in a special Reading Laboratory were not included in the study.
Chapter 4

PRESENTATION AND ANALYSIS OF THE DATA

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

Treatment of the Data

The t test for correlated data was applied to test the hypotheses dealing with the pretest and posttest mean scores within each group. The t test for uncorrelated data was applied to test the hypotheses dealing with the posttest mean scores between groups. Analysis of variance was used to test the differences between treatment groups, grade, and sex of subjects in the study. Each hypothesis was treated independently. When the t value was found to be significant at the .05 level of confidence, the null hypothesis was rejected. When the t value was not significant, the null hypothesis was not rejected.

Presentation of the Data

H0₁: The null hypothesis states that there will be no significant difference between pretest and posttest mean scores for the Controlled Reader Group on the subtest of the SDRT on Comprehension. The statistical data in Table 1 reveals a significant difference in the pretest and posttest mean scores of the Controlled
Table 1
Reading Comprehension Pretest and Posttest
Mean Scores for the Controlled Reader Group as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>T-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>71</td>
<td>5.338</td>
<td>2.191</td>
<td>-5.09*</td>
</tr>
<tr>
<td>Posttest</td>
<td>71</td>
<td>5.929</td>
<td>2.066</td>
<td></td>
</tr>
</tbody>
</table>

*Significant beyond the .01 level of confidence.
Reader Group. Therefore, the null hypothesis is rejected at the .01 level of confidence. The data suggests that the Controlled Reader Group made significant gains in the area of reading comprehension.

$H_{O2}$: The null hypothesis states that there will be no significant difference between pretest and posttest mean scores of the SSR Group on the subtest of the SDRT on Comprehension. The statistical data in Table 2 reveals a significant difference in the pretest and posttest mean scores of the SSR Group. Therefore, the null hypothesis is rejected at the .01 level of confidence. The data suggests that the SSR Group made significant gains in the area of reading comprehension.

$H_{O3}$: The null hypothesis states that there will be no significant difference between pretest and posttest mean scores of the Control Group on the subtest of the SDRT on Comprehension. The statistical data in Table 3 reveals a significant difference in the pretest and posttest mean scores of the Control Group. Therefore, the null hypothesis is rejected at the .01 level of confidence. The data suggests that the Control Group made significant gains in the area of reading comprehension.

$H_{O4}$: The null hypothesis states that there will be
Table 2
Reading Comprehension Pretest and Posttest
Mean Scores for the SSR Group
as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>83</td>
<td>4.9639</td>
<td>1.770</td>
<td>-5.96*</td>
</tr>
<tr>
<td>Posttest</td>
<td>83</td>
<td>5.7711</td>
<td>1.790</td>
<td></td>
</tr>
</tbody>
</table>

*Significant beyond the .01 level of confidence
Table 3
Reading Comprehension Pretest and Posttest
Mean Scores for the Control Group
as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>T-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>67</td>
<td>5.1642</td>
<td>2.060</td>
<td>-4.13*</td>
</tr>
<tr>
<td>Posttest</td>
<td>67</td>
<td>5.6567</td>
<td>1.958</td>
<td></td>
</tr>
</tbody>
</table>

*Significant beyond the .01 level of confidence.
no significant difference between posttest mean scores for the Controlled Reader Group and the SSR Group on the subtest of the SDRT on Comprehension. The statistical data in Table 4 presents results indicating that the $t$ value is not significant at the .05 level of confidence. Therefore, the null hypothesis is sustained. The data suggests that one supplementary technique did not make greater gains in the area of comprehension than the other supplementary technique.

$H_0_5$: The null hypothesis states that there will be no significant difference between posttest mean scores for the Controlled Reader Group and the Control Group on the subtest of the SDRT on Comprehension. The statistical data in Table 5 presents results indicating that the $t$ value is not significant at the .05 level of confidence. Therefore, the null hypothesis is sustained. The data suggests that this supplementary technique did not make greater gains in the area of comprehension than the control group.

$H_0_6$: The null hypothesis states that there will be no significant difference between posttest mean scores for the SSR Group and the Control Group on the subtest of the SDRT on Comprehension. The statistical data in Table 6 presents results indicating that the $t$ value is not significant at the .05 level of confidence.
Table 4
A Comparison of Reading Comprehension Posttest Mean Scores Between the Controlled Reader Group and the SSR Group as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>DF</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Reader</td>
<td>71</td>
<td>5.9296</td>
<td>2.066</td>
<td>152</td>
<td>.51*</td>
</tr>
<tr>
<td>SSR</td>
<td>83</td>
<td>5.7711</td>
<td>1.790</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not significant beyond the .05 level of confidence.
Table 5

A Comparison of Reading Comprehension
Posttest Mean Scores Between the
Controlled Reader Group and the Control Group
as Measured on the SDRT in Stanines

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>DF</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Reader</td>
<td>71</td>
<td>5.9296</td>
<td>2.066</td>
<td>136</td>
<td>0.80*</td>
</tr>
<tr>
<td>Control</td>
<td>67</td>
<td>5.6567</td>
<td>1.958</td>
<td></td>
<td>0.80*</td>
</tr>
</tbody>
</table>

*Not significant beyond the .05 level of confidence.
Table 6
A Comparison of Reading Comprehension Posttest Mean Scores Between the SSR Group and the Control Group as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>DF</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSR</td>
<td>83</td>
<td>5.771</td>
<td>1.790</td>
<td>148</td>
<td>0.37*</td>
</tr>
<tr>
<td>Control</td>
<td>67</td>
<td>5.6567</td>
<td>1.958</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not significant beyond the .05 level of confidence.
Therefore, the null hypothesis is sustained. The data suggests that this supplementary technique did not make greater gains in the area of comprehension than the control group.

HO₇: The null hypothesis states that there will be no significant difference between pretest and posttest mean scores for the Controlled Reader Group on the subtest of the SDRT on Rate of Reading. The statistical data in Table 7 reveals a significant difference in the pretest and posttest mean scores of the Controlled Reader Group. Therefore, the null hypothesis is rejected at the .01 level of confidence. The data suggests that the Controlled Reader Group made significant gains in the area of reading rate.

HO₈: The null hypothesis states that there will be no significant difference between pretest and posttest mean scores for the SSR Group on the subtest of the SDRT on Rate of Reading. The statistical data in Table 8 reveals a significant difference in the pretest and posttest mean scores of the SSR Group. Therefore, the null hypothesis is rejected at the .01 level of confidence. The data suggests that the SSR Group made significant gains in the area of reading rate.

HO₉: The null hypothesis states that there will be no significant difference between pretest and posttest
Table 7
Reading Rate Pretest and Posttest
Mean Scores for the Controlled Reader Group
as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>71</td>
<td>3.9014</td>
<td>1.300</td>
<td>-8.07*</td>
</tr>
<tr>
<td>Posttest</td>
<td>71</td>
<td>5.2676</td>
<td>1.373</td>
<td></td>
</tr>
</tbody>
</table>

*Significant beyond the .01 level of confidence.
# Table 8

Reading Rate Pretest and Posttest

Mean Scores for the SSR Group as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>83</td>
<td>3.8193</td>
<td>1.128</td>
<td>~6.92*</td>
</tr>
<tr>
<td>Posttest</td>
<td>83</td>
<td>4.5181</td>
<td>1.130</td>
<td></td>
</tr>
</tbody>
</table>

*Significant beyond the .01 level of confidence.
mean scores for the Control Group on the subtest of the SDRT on Rate of Reading. The statistical data in Table 9 reveals a significant difference in the pretest and posttest mean scores of the Control Group. Therefore, the null hypothesis is rejected at the .01 level of confidence. The data suggests that the Control Group made significant gains in the area of reading rate.

**Ho\textsubscript{10}:** The null hypothesis states that there will be no significant difference between posttest mean scores for the Controlled Reader Group and the SSR Group on the subtest of the SDRT on Rate of Reading. The statistical data in Table 10 reveals significant difference in the posttest mean scores. Therefore, the null hypothesis is rejected at the .01 level of confidence. The data indicates significantly greater gains by the Controlled Reader Group is responsible for this difference.

**Ho\textsubscript{11}:** The null hypothesis states that there will be no significant difference between posttest mean scores for the Controlled Reader Group and the Control Group on the subtest of the SDRT on Rate of Reading. The statistical data in Table 11 reveals a significant difference in the posttest mean scores. Therefore, the null hypothesis is rejected at the .01 level.
Table 9

Reading Rate Pretest and Posttest

Mean Scores for the Control Group

as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>67</td>
<td>3.7313</td>
<td>1.188</td>
<td>-6.46*</td>
</tr>
<tr>
<td>Posttest</td>
<td>67</td>
<td>4.6567</td>
<td>1.377</td>
<td></td>
</tr>
</tbody>
</table>

*Significant beyond the .01 level of confidence.
Table 10
A Comparison of Reading Rate
Posttest Mean Scores Between the Controlled Reader Group and the SSR Group as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>DF</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Reader</td>
<td>71</td>
<td>5.2676</td>
<td>1.373</td>
<td>152</td>
<td>3.72*</td>
</tr>
<tr>
<td>SSR</td>
<td>83</td>
<td>4.5181</td>
<td>1.130</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant beyond the .01 level of confidence.
Table 11

A Comparison of Reading Rate Posttest Mean Scores Between the Controlled Reader Group and the Control Group as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>DF</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Reader</td>
<td>71</td>
<td>5.267</td>
<td>1.373</td>
<td>136</td>
<td>2.61*</td>
</tr>
<tr>
<td>Control Group</td>
<td>67</td>
<td>4.657</td>
<td>1.377</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant beyond the .01 level of confidence.
of confidence. The data indicates significantly greater gains by the Controlled Reader Group is responsible for this difference.

$H_{0_{12}}$: The null hypothesis states that there will be no significant difference in the posttest mean scores of the SSR Group and the Control Group on the subtest of the SDRT on Rate of Reading. The statistical data in Table 12 presents results indicating that the $t$ value is not significant at the .05 level of confidence. Therefore, the null hypothesis is sustained. The data indicates that this supplementary technique did not produce greater gains in the area of reading rate than the control treatment.

**Additional Findings**

The statistical data in Table 13 presents the pretest and posttest scores for the 221 subjects on the Comprehension and Rate of Reading subtests of the SDRT. The statistical data in Table 14 presents the mean difference scores between pretest and posttest scores.

Analysis of variance was used to analyze main effect differences for treatment group, grade, and sex. The statistical data in Table 15 presents an analysis of variance for main effect pretest and posttest mean difference scores on the Comprehension subtest of the
Table 12

A Comparison of Reading Rate Posttest Mean Scores Between the SSR Group and the Control Group as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>DF</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SSR</td>
<td>83</td>
<td>4.5181</td>
<td>1.130</td>
<td>148</td>
<td>-0.68*</td>
</tr>
<tr>
<td>Control</td>
<td>67</td>
<td>4.6567</td>
<td>1.377</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not significant beyond the .05 level of confidence.*
Table 13
Pretest and Posttest Scores for Reading Comprehension and Reading Rate as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>Mode</th>
<th>SD</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reading Comprehension</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>5.145</td>
<td>5.000</td>
<td>2.011</td>
<td>4.964</td>
<td>8.000</td>
</tr>
<tr>
<td>Posttest</td>
<td>5.787</td>
<td>5.000</td>
<td>1.927</td>
<td>5.787</td>
<td>8.000</td>
</tr>
<tr>
<td><strong>Reading Rate</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td>3.819</td>
<td>4.000</td>
<td>1.200</td>
<td>3.843</td>
<td>8.000</td>
</tr>
<tr>
<td>Posttest</td>
<td>4.801</td>
<td>4.000</td>
<td>1.323</td>
<td>4.698</td>
<td>8.000</td>
</tr>
</tbody>
</table>
Table 14
Difference Scores Between Pretests and Posttests for Reading Comprehension and Reading Rate by Treatment Groups in Stanines

<table>
<thead>
<tr>
<th></th>
<th>( \bar{M} )</th>
<th>Mode</th>
<th>SD</th>
<th>Median</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading Comprehension</td>
<td>0.643</td>
<td>0.000</td>
<td>1.085</td>
<td>0.535</td>
<td>8.000</td>
</tr>
<tr>
<td>Reading Rate</td>
<td>0.982</td>
<td>1.000</td>
<td>1.206</td>
<td>0.989</td>
<td>9.000</td>
</tr>
</tbody>
</table>
Table 15
Analysis of Variance for Main Effect
Pretest and Posttest Differences for Reading Comprehension
by Treatment Group as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>DF</th>
<th>E^2</th>
<th>M^2</th>
<th>F</th>
<th>F prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Reader</td>
<td>71</td>
<td>0.5915</td>
<td>0.9795</td>
<td></td>
<td>3.9433</td>
<td>1.9717</td>
<td>1.687</td>
<td>.1855*</td>
</tr>
<tr>
<td>SSR</td>
<td>83</td>
<td>0.8072</td>
<td>1.2342</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>67</td>
<td>0.4925</td>
<td>0.9750</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not significant beyond .05 level of confidence.
SDRT. The results indicate no significant difference among the treatment groups. The data suggests that the SSR Group tends to have a higher mean score than the other treatment groups although it is not significantly higher.

Analysis of variance for main effect pretest and posttest mean differences scores for the treatment groups on the Rate of Reading subtest of the SDRT is presented in Table 16. The statistical data reveals a significant difference at the .01 level of confidence. Mean difference scores suggest that the Controlled Reader Group is responsible for the difference.

Analysis of variance for main effect pretest and posttest mean difference scores for grade on the Comprehension subtest of the SDRT is presented in Table 17. The statistical data reveals no significant difference at the .05 level of confidence. The data suggests that fifth graders did not do significantly better than sixth graders.

Analysis of variance for main effect pretest and posttest mean difference scores for grade on the Rate of Reading subtest of the SDRT is presented in Table 18. The statistical data reveals significant difference at the .05 level of confidence. The data indicates significantly greater gains by fifth
Table 16
Analysis of Variance for Main Effect
Pretest and Posttest Differences for Rate of Reading
by Treatment Groups as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>( \bar{M} )</th>
<th>SD</th>
<th>DF</th>
<th>( \bar{E}^2 )</th>
<th>( \bar{E}^2 )</th>
<th>F</th>
<th>F prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controlled Reader</td>
<td>71</td>
<td>1.3662</td>
<td>1.4267</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSR</td>
<td>83</td>
<td>0.6988</td>
<td>0.9204</td>
<td>2</td>
<td>17.3520</td>
<td>8.6760</td>
<td>6.251</td>
<td>0.0027*</td>
</tr>
<tr>
<td>Control</td>
<td>67</td>
<td>0.9254</td>
<td>1.1718</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant beyond .01 level of confidence.
Table 17

Analysis of Variance for Main Effect
Pretest and Posttest Differences for Reading Comprehension
by Grade as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th>Reading Comprehension</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>DF</th>
<th>E²</th>
<th>M²</th>
<th>F</th>
<th>F prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 5</td>
<td>102</td>
<td>0.5294</td>
<td>0.8409</td>
<td>1</td>
<td>2.4240</td>
<td>2.4240</td>
<td>2.071</td>
<td>0.1472*</td>
</tr>
<tr>
<td>Grade 6</td>
<td>119</td>
<td>0.7395</td>
<td>1.2519</td>
<td>1</td>
<td>2.4240</td>
<td>2.4240</td>
<td>2.071</td>
<td>0.1472*</td>
</tr>
</tbody>
</table>

*Not significant at .05 level of confidence.
Table 18
Analysis of Variance for Main Effect
Pretest and Posttest Difference Scores for Reading Rate by Grade as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th>Reading Rate</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>DF</th>
<th>E²</th>
<th>M²</th>
<th>F</th>
<th>F prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 5</td>
<td>102</td>
<td>1.1961</td>
<td>1.2668</td>
<td>1</td>
<td>8.6895</td>
<td>8.6895</td>
<td>6.114</td>
<td>0.0136*</td>
</tr>
<tr>
<td>Grade 6</td>
<td>119</td>
<td>0.7983</td>
<td>1.1243</td>
<td>1</td>
<td>8.6895</td>
<td>8.6895</td>
<td>6.114</td>
<td>0.0136*</td>
</tr>
</tbody>
</table>

*Significant beyond the .05 level of confidence.
graders are responsible for the difference.

Analysis of variance for main effect pretest and posttest mean difference scores for sex on the Comprehension subtest of the SDRT is presented in Table 19. The statistical data reveals no significant difference at the .05 level of confidence. The data suggests that one sex did not do significantly better than the other.

An analysis of variance for main effect pretest and posttest mean difference scores for sex on the Rate of Reading subtest of the SDRT is presented in Table 20. The statistical data reveals no significant difference at the .05 level of confidence. The data suggests that one sex did not perform significantly better than the other.
Table 19
Analysis of Variance for Main Effect
Pretest and Posttest Differences for Reading Comprehension
by Sex as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th>Reading Comprehension</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>F</th>
<th>$E^2$</th>
<th>$M^2$</th>
<th>F</th>
<th>F prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>107</td>
<td>0.6822</td>
<td>1.1544</td>
<td>1</td>
<td>0.3271</td>
<td>0.3271</td>
<td>0.277</td>
<td>0.5996*</td>
</tr>
<tr>
<td>Female</td>
<td>114</td>
<td>0.6053</td>
<td>1.0186</td>
<td>1</td>
<td>0.3271</td>
<td>0.3271</td>
<td>0.277</td>
<td></td>
</tr>
</tbody>
</table>

*Not significant beyond the .05 level of confidence.
Table 20

Analysis of Variance for Main Effect
Pretest and Posttest Differences for Reading Rate
by Sex as Measured by the SDRT in Stanines

<table>
<thead>
<tr>
<th>Reading Rate</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>DF</th>
<th>E²</th>
<th>M²</th>
<th>F</th>
<th>F prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>107</td>
<td>0.8972</td>
<td>1.1069</td>
<td>1</td>
<td>1.4883</td>
<td>1.4883</td>
<td>1.024</td>
<td>0.3137*</td>
</tr>
<tr>
<td>Female</td>
<td>114</td>
<td>1.0614</td>
<td>1.2918</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not significant beyond the .05 level of confidence.
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

This study investigated the effects of two supplementary techniques, the Controlled Reader and Sustained Silent Reading, on the rate and comprehension of upper grade elementary school students.

The general hypothesis of this study was based on the assumption that there would be no significant difference in comprehension and rate among children who were involved in the Controlled Reader Group, the Sustained Silent Reading Group, or the Control Group.

The 221 subjects included in this 10 week study were fifth and sixth grade students randomly assigned to one of two experimental groups or a control group. A pretest/posttest procedure was employed using the Comprehension and Rate of Reading subtests of the SDRT. Following the pretest, all three groups continued their regular classroom basal reading program. The two experimental groups substituted their non-basal related follow-up activities for one of the supplementary techniques three times a week, while the control group continued the non-basal related follow-up activities. All groups received equal amounts of
reading instruction time.

The *t* test for correlated data was applied to test six of the 12 statistical hypotheses. The *t* test for uncorrelated data was applied to the other six statistical hypotheses. In each instance, the level of confidence necessary to reject the null hypothesis was set at the .05 level. Each hypothesis was treated independently. Analysis of variance was used to test differences in pretest and posttest mean scores for treatment group, grade, and sex.

Hypotheses 1, 2, 3, 7, 8, & 9 compared pretest and posttest mean scores within each group. Each hypothesis attained significance at the .01 level of confidence confirming the gains in reading comprehension and reading rate for all three groups. Hypotheses 4, 5, 6, 10, 11, & 12 measured posttest mean scores between groups. Significance was attained at the .01 level of confidence confirming the gains in reading rate for the Controlled Reader Group. There was no significant difference between the groups in the area of comprehension.

An analysis of variance was applied to the additional findings. Significance at the .05 level of confidence was found regarding reading rate for the Controlled Reader and for fifth graders. Significant differences
were not found between groups when divided by sex, nor were significant differences found for comprehension when analyzed by treatment group, grade, or sex.

Conclusions

The findings in this study suggest that:

1. Subjects in all three treatment groups made significant gains in reading comprehension as indicated by the pretest/posttest difference scores on the Comprehension subtest of the SDRT. The data suggests that a good teacher-directed reading program combined with non-basal related follow-up activities, including the supplementary techniques and those activities of the control group, results in significant comprehension improvement.

2. Subjects in all three treatment groups made significant gains in reading rate as indicated by the pretest/posttest difference scores on the Rate of Reading subtest of the SDRT. Again, the data suggests that a good teacher-directed reading program and non-basal related follow-up activities result in reading rate improvement.

3. The subjects in the experimental group
using the Controlled Reader as a supplementary technique improved their reading rate significantly more than the Sustained Silent Reading Group and the Control Group. Improvement in reading rate seems to be enhanced by the Controlled Reader. This supports Witham's (1966) findings that the use of the Controlled Reader increased the reading rate in his three group study. This also supports Swalm and Kling's (1973) findings in which the timed reading drills group made significant gains in rate but not comprehension over the free reading group.

4. On the Comprehension subtest of the SDRT, there was no significant difference among the three treatment groups although the SSR Group appeared to improve more. The better performance of the SSR Group points out the advantage of reading practice using self-selected reading material.

5. Subjects in the three treatment groups made significant gains in pretest/posttest difference scores in both comprehension and reading rate. These findings tend
to support Shores (1968), Tinker (1940), and Robinson (1940) that there is a correlation between reading rate and comprehension when the reading material is within the reader's educational experience.

6. Grade level appeared to have an effect on reading rate. Pretest/posttest differences scores in rate were significantly related to differences in grade level.

Recommendations

The data from this study supports the current research (Miller, 1973) that effective reading programs should emphasize rate with comprehension. The data also supports the contention that teachers of fifth and sixth grade students should consider beginning rate training (McCracken, 1960; Scale, 1968; and Swalm, 1969). The Controlled Reader technique appeared to show potential for an increase in reading rate while increasing comprehension. The SSR technique and the Control Group also increased reading rate while improving comprehension. The possibilities for the uses of these techniques have not been fully explored. The following areas are recommended for further research:

1. The treatment period should be extended and the results compared.
2. Subjects should be tested again at a later date to determine whether comprehension and rate gains are sustained over time.

3. More valid and reliable types of testing instruments may be identified to assist in the measurement of reading comprehension and rate.

4. This study should be replicated in a different socio-economic, racial, or cultural environment, to test the validity and reliability of its findings.

5. The treatment groups could be divided into different academic levels to determine whether one technique affected one level more than another level.
Bibliography


Kimberly, M. C. The Effectiveness of Reading Speed in Grades Two, Four, Six, and Eight. U.S. Educational Resources Information Center, ERIC Document ED 078 373, 1972.


Mork, T. A. Sustained silent reading in the classroom. Reading Teacher, 1972, 25, 438-441.


Speer, G. Using mechanical devices can increase speed of reading. *The Nation's Schools*, 1951, 48, 21-34.


Tinker, M. A. Dr. Robinson on speed versus comprehension in reading: a discussion. *Journal of Educational Psychology*, 1940, 31, 559-560.


Witty, P. A. *Rate of reading - a crucial issue.*

Simba
by Muriel Anderson.

Preview:
1. Read the title.
2. Look at the picture.
3. Read the first three paragraphs.
Then answer the question on the bottom of the next page.

When Simba the lion cub was so tiny that he was still being carried by his mother, he had an experience that changed his whole life.

A brush fire swept over the vast African grassland where Simba lived. In trying to escape the fire, his mother dropped him in the tall grass. He was so young that his eyes weren’t open yet, so when he became separated from his mother, he was completely lost. The fire got closer. He could feel it burn his nose. He was frightened and began to cry.

It was a lucky thing Simba did cry because a native heard him and began to search around in the grass. He found him and carried him back to the camp where some hunters from America were staying.

The men had been sent on a hunting expedition by the Milwaukee Public Museum in Wisconsin. They were hunters and were not prepared to care for such a tiny lion cub. But Sim, as he was nicknamed, was so cute they decided to keep him. He was hungry and began to cry. "Where will we get milk for him?" one of the men asked anxiously.

"I think I know where I can get a goat," said a native. He went off and returned with a mother goat and her kid. Sim loved the rich warm milk and he thrived on it and grew rapidly.

The cub liked to explore things. He soon discovered
that the cook could often be persuaded to give him a piece of meat. Sometimes he crept into a tent and took a nap on one of the cots. Sometimes he chased the young kid or played with a young baboon that had strayed into camp and stayed.

But, like all children, Sim was curious about the world beyond his own backyard. One day he wandered off and tumbled into a creek near the camp. He quickly scrambled out again and crawled back to camp, soaking wet. When the men realized what had happened, they became afraid that he would get lost or be grabbed by an eagle or some dangerous beast. So, the next time Sim wandered off into the tall grass, a native guide took a big tin can and a stick and slipped quietly around the patch of grass. When Sim came out the other side, he was met by loud noises the guide made by pounding the stick on the tin can. It frightened Sim so badly he never wandered away from camp again.

By the time he was five or six months old, he was playing at stalking and catching anything that moved. His teeth were strong and his legs powerful. The claws on his front paws were long and sharp. But when he played with his human friends, he was careful not to uncover his sharp claws. Sometimes he'd crouch behind a box or bush and watch for one of the men to pass. Then he'd jump and clutch him with his powerful front paws. But Simba never clawed or bit hard enough to do serious harm.

When it was time for the expedition to go back to America, no one wanted to leave Sim behind. But it was going to be a long and difficult trip. The men planned to take the Nile route: a 4,000-mile journey by auto, riverboat, and rail before they even reached the seaport.

Then one of the men learned that a cargo ship was sailing to New York from Mombasa, Kenya, in eastern Africa. It was to leave at about the same time the expedition was to start down the Nile. "We can send Sim home on the cargo ship!" said one of the men.

They made a huge box with iron bars, put Sim in his box, and took him to the ship where he was lifted aboard the cargo ship. One of the officers on the ship took a liking to Sim, let him out of his cage and took him to live with him. During the seven-week trip, Simba had the run of the ship.

When he arrived in New York, he had to go back into the box. Then came a long train ride to Milwaukee and a new home on the roof of the public museum. He played with a couple of bowling balls and got plenty of exercise running about on the fenced-in rooftop. Above all other forms of play, he loved a wrestling match with one of his friends. Even though he was nearly grown, he never scratched or bit in any way that would hurt. Sim had been shown only love since he had been a tiny cub, and he responded to this love all his life.

When he got bigger, it was decided that a zoo would be the best place for him. So he was moved to Milwaukee's Washington Park Zoo, where he lived for many years. Whenever his old friends came to see him, he always remembered them and was allowed out of his cage for a good roughhouse.

The life of a lion in the wild is only a few years, but Sim's sheltered life stretched out to seventeen years. When he finally died, his body was sent to the taxidermy department of the museum and prepared for permanent display. Today, you may see Sim, looking almost as he did when he was alive. You can find him in the African Diorama at the Milwaukee Public Museum where he looks out over a wide stretch of plains.

What an exciting long life he had and how far he traveled from his home in Africa!

From the title, illustration, and your preview, you know this story is about a

......a. lion cub that is born in a zoo.
......b. lion that is a man-eater.
......c. lion cub that is found by a native.
......d. lion cub and his first hunt.

The answer can be found at the bottom of the next page.
SIMBA

Study the Key Words

**kid**
A young cat is called a kitten and a young dog is called a puppy. But a young goat is called a kid.

- kid (kid), 1. a baby goat. 2. the leather made from the skin of a young goat, used for gloves and shoes. 3. child. *Used in common talk.* n.

**permanent**
When our town wanted to honor the men who served in the war, it put up a statue as a permanent reminder of their service. It will remain as a lasting means of honoring the men who served their country.

- permanent (per'man ant), lasting; intended to last: not for a short time only: a permanent filling in a tooth. After doing odd jobs for a week, he got a permanent position as office boy. adj.

**respond**
When the teacher asked for help after school, the class responded eagerly. Eighteen of us stayed and helped her put up the exhibit. She was happy with our response.

- respond (ri spond), 1. answer; reply: He responded briefly to the question. 2. act in answer; react: A dog responds to kind treatment by loving its master. Mary responded quickly to the medicine and was well in a few days. v.

**taxidermy**
When a zoo animal dies, the taxidermy department often prepares it for display. The animal is skinned and a life-size model of the animal is made from either wood or plaster. Then, the skin is mounted over the model. When the taxidermist has finished his work, the display animal looks very lifelike.

- taxidermy (tak'sa der'mi), art of preparing the skins of animals and stuffing and mounting them so that they look like living animals. n.

Now read the story with the Controlled Reader.
Read to find out what happened to Simba that changed his life.
Check Your Comprehension

Choose the best answer.

1. The men got milk for Simba because
   a. he was too young to be fed anything else.
   b. he had always been fed goat’s milk.
   c. meat made him very sick.
   d. they did not want him to become a meat-eater.

2. After Simba fell in the creek, the men became afraid that he
   a. would swim down the creek and disappear.
   b. might be grabbed by a dangerous animal.
   c. would always be frightened by water.
   d. would want to return to his mother.

3. When Simba was five or six months old he
   a. stole a large piece of meat from the cook.
   b. played at stalking and catching anything that moved.
   c. killed and ate the kid and a monkey.
   d. wandered off into the tall grass and became lost.

4. Simba was brought back to America because the men
   a. had become so fond of him.
   b. intended to put him in the circus.
   c. had been sent to capture him for the museum.
   d. wanted to sell him to a zoo.

5. Simba’s favorite sport was
   a. playing with bowling balls.
   b. running about on the museum roof.
   c. wrestling with one of his friends.
   d. never uncovered his claws.

6. When Simba played with his friends, he
   a. always roared loudly.
   b. sometimes hurt the men with his sharp claws.
   c. he grew too big for the rooftop.
   d. it was not safe for him to live on the rooftop.

7. Simba was moved from the rooftop to the zoo because
   a. he grew too big for the rooftop.
   b. it was the best place for him.
   c. he grew lonesome for his friends at the zoo.
   d. it was not safe for him to live on the rooftop.

8. After he died, Simba was
   a. buried in Milwaukee.
   b. stuffed and kept at the zoo.
   c. skinned and made into a rug.
   d. mounted in a permanent museum display.

9. Simba had such a long life because
   a. he had been found when he was a tiny cub.
   b. the African Diorama was a good place to live.
   c. he had good care and food, and no enemies.
   d. his good friends gave him so much love.

10. This story is mainly about
   a. a lion cub that found a new home in America.
   b. an African hunting expedition that brought back animals.
   c. a lion that remained tame and gentle even after it grew up.
   d. two museums in Milwaukee that raised a lion cub.

Think about: Why was Simba’s life happier and better at the zoo than it probably would have been in the African grassland?

<table>
<thead>
<tr>
<th>Rate in w.p.m.</th>
<th>Comprehension</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Enter scores on Progress Chart