

A STUDY OF THE SHIFT IN ERROR PATTERNS BETWEEN
INSTRUCTIONAL AND FRUSTRATION LEVELS AMONG
THIRD GRADE DEVELOPMENTAL READERS

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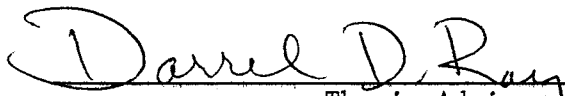
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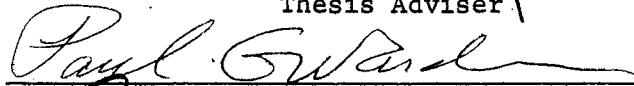
Submitted to the Faculty of the Graduate College
of the Oklahoma State University
in partial fulfillment of the requirements
for the Degree of
DOCTOR OF EDUCATION
May, 1973

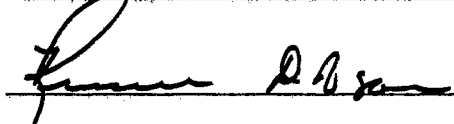
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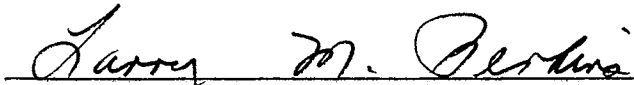
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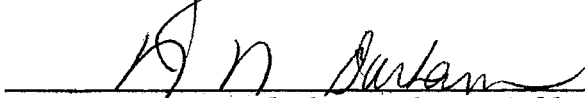

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ACKNOWLEDGMENTS

The writer wishes to express special appreciation to Dr. Darrel D. Ray, chairman of her Advisory Committee, for his constant help and encouragement throughout this study. For their consideration and helpful suggestions, she also wishes to express appreciation to the other members of her committee, Dr. Russell Dobson, Dr. Bill Elsom, Dr. Larry Perkins, and Dr. Paul Warden.

Appreciation is extended to the principal and the teachers of Cherokee Elementary School, Muskogee, Oklahoma, and to those second and third grade students who participated in this study.

My sincerest appreciation is expressed to my colleagues and friends, Sheldon Russell, Dee Pratt, and David Elijah, for their help during the collection of the data for this study. For hours of babysitting service, as well as many other types of supportive services, special appreciation is extended to my parents. Acknowledgment of enduring patience and encouragement throughout the study is gratefully expressed to my husband, Bill.

To our daughters, Pam and Susan, this study is affectionately dedicated.

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CHAPTER I

PRESENTATION OF PROBLEM

Although oral reading inventories have been advocated for many years, the possible relationship between the type of error made and the difficulty level of the reading material has not been considered. For nearly half a century, leaders in the field of reading have encouraged the analysis of oral reading errors to determine the reading strategies utilized by the student and thereby to help pinpoint instructional deficiencies. Remediation of these deficiencies is paramount to progress in reading skill.

Although the teacher cannot be certain what has taken place in any one oral reading error, it is assumed that ". . . it is possible to observe some trends in oral reading behaviors as children mature in this skill (Spache, 1969, p. 332)." In other words, as children mature in the skill of reading some changes in the types of reading errors they make occur; perhaps that different types of errors occur at different levels of material difficulty. No research has been found that indicates what trends of oral reading errors emerge on different difficulty levels to produce a picture of the reading process for any student.

Need for the Study

This investigation was designed to ascertain the presence of a shift in the type of oral reading error patterns between instructional

and frustration reading levels. The studies concerned with error pattern shifts have found that some errors have a tendency to shift quite significantly as a reader moves from instructional level to frustration level material (Berends, 1971; Christenson, 1966; McLeod, 1918).

Berends hypothesized in her study that this shift appeared to be due to the reader reverting to an earlier level of skill development when faced with a task that was too difficult. Fifty-five years ago McLeod (1918) reported that some types of errors increased while some types of errors decreased as the difficulty of the reading material increased. However, McLeod studied readers who were accelerated in their grade; thus, his findings may not be relevant to other kinds of readers. In Spache's opinion, ". . . errors probably change in nature according to the difficulty of the material being read" (1950, p.442).

In addition to the difficulty of the reading material, error patterns may be affected by the sentence structure of the material and its similarity to the reader's speech patterns (Goodman, 1969; Nurss, 1970), or the opportunity for making certain kinds of errors (Gates, 1947; Bennett, 1942; Payne, 1930). The current investigation was concerned only with the effect of the difficulty of the material on the types of errors made while reading orally.

While the effect of the difficulty of the material on the oral reading error patterns has been studied (Schummers, 1956; Schale, 1964; Christenson, 1966) at some length, and the presence of different error patterns found on different levels of material difficulty generally concluded, no study has been found that studied the nature of these different error patterns. No research has determined the point or level where the type of error pattern changes when the independent,

instructional, or frustration reading level of each subject is considered.

A significant pattern of the word recognition deficiencies of each subject should emerge after observation and tabulation of the different types of oral reading errors. Daniels (1966) referred to this point when he said that teachers should identify the pattern of reading deficiencies as well as diagnose the level of mastery of reading skills. Kerfoot (1965) also urged careful interpretation of the various types of error patterns when determining instructional needs.

Smith (1971) identifies levels of word identification. In his opinion the inability to immediately identify a word or its meaning requires mediated identification. This is necessary because a visual feature list does not exist to indicate the appropriate word category or semantic interpretation. He further states that the mediated identification requires a quite different set of rules. Not only is visual information needed, but phonic or analogy rules are also required. Thus the mediated identification process is a more basic method of information-processing than is immediate identification of words. Smith (1971) concludes by saying that mediated identification is particularly undesirable in reading because ". . . it slows the reading process and overloads the visual information-processing and memory system" (p. 217).

If an error in oral reading that is made without hesitating can be considered a faulty immediate identification, then an error made with a definite hesitation to attempt different possible pronunciations could be considered a faulty mediated identification. Two different types of problems exist. If a student pronounces "fad" for "fat," but, when his

attention as directed to his mistake, immediately corrects his error, he does know the difference between /t/ and /d/. If, however, when attention is directed to his mistake, the student cannot immediately correct himself, but must make several attempts at pronouncing the word, it is evident that he is not sure of the difference between /t/ and /d/. In planning instructional strategies for students it is important to determine as nearly as possible the precise type(s) of errors made.

The determination that a shift in oral reading errors does occur, and at what level it occurs would be of much help in evaluating the patterns of oral reading errors. The point at which the earlier level of skill development occurs should be the beginning of remediation in reading.

Another problem in diagnosing a reading problem concerns the possible lack of agreement of reading errors as indicated by standardized reading tests and extended oral readings. This investigation will attempt to show the relationship between silent reading errors as indicated by two standardized reading tests and oral reading errors as indicated by extended oral readings.

The purpose of this study was to examine the oral reading error patterns of developmental readers on third grade reading level to determine the existence of a shift in the patterns of errors between instructional and frustration reading levels. It was anticipated that a shift would infer a reading problem that was closer to the beginning of reading instruction, or more basic on the frustration than on the instructional reading level.

Hypotheses

The hypotheses to be studied are in the null form.

1. There is no significant correlation between the error patterns on the instructional level of the extended oral readings and the error

patterns as indicated on the subtests of the Stanford Diagnostic Reading Test.

2. There is no significant correlation between the error patterns on the instructional level of the extended oral readings and the error patterns indicated on the subtests of the Bond-Balow-Hoyt Silent Reading Diagnostic Test.

3. There is no significant correlation between the error patterns found on the instructional level of the extended oral readings and the error patterns found on the frustration level of the extended oral reading.

Each hypothesis will be tested using a number of error pattern categories.

Definitions of Terms

Developmental readers were defined as those second and third grade students who were reading on an instructional level between 2.5 and 4.0 grade level as determined by an individual performance on the Standard Reading Inventory. These students were considered to be developmental third grade readers because they were reading not more than three-fourths of a year below or above 3.25 reading level.

Instructional level refers to the passage on which the reader meets the word recognition criteria of 91%-94% with a comprehension criteria of at least 70% on the Standard Reading Inventory.

Frustration level refers to the passage on which the reader meets the word recognition criteria of 90% or less on the Standard Reading Inventory.

Error, miscue, or word recognition error refers to the deviation between an oral response and an expected response in the oral reading of the student.

Extended oral readings refers to a passage of at least 200 words read orally at sight by the student. The extended oral readings were developed by Stuever and used in her study (Stuever, 1969). They are entitled "Stories of Stuever." Readability levels of the stories were established using the Spache formula (1950) so that these levels would compare in readability with the equivalent passages on the Standard Reading Inventory.

Berends-Stuever-Ray Error Analysis (B-S-R) refers to an error classification system synthesizing the sound-symbol approach of Monroe (1928) and the visual-perceptual approach of Gates (1947, 1962). A complete description is given in Chapter III.

Error-type means a specific kind of error (e.g., word omission) and is a subdivision of an error category. The error-types used in this study are more fully explained in the description of the B-S-R Analysis in Chapter III.

Error category refers to a class or grouping of error-types. The six major categories on the B-S-R Error Analysis are: visual perceptual--word parts, directional confusion, visual-auditory, syllabic division, structure and behavioral characteristics. The categories are described in the B-S-R Error Analysis description in Chapter III.

Intratest comparisons refer to comparisons between the types of errors made on different levels--instructional or frustration--of a single test.

Intertest comparisons refer to comparisons of the types of errors made on the Silent Reading Diagnostic Test, the Stanford Diagnostic Reading Test, and the Stories of Stuever Reading Test.

Delimitations

Scope of the Study

This investigation includes an analysis of the oral reading errors made by developmental readers at third grade reading level on extended oral readings. Comparisons of the resulting error patterns on instructional and frustration levels were made. Comparisons were made between 21 kinds of possible errors on instructional level and 21 kinds of possible errors on frustration level.

The subjects in this study included all of the second grade students and some of the third grade students who were reading developmentally at third grade level. The students came from one elementary school of approximately 625 membership in an eastern Oklahoma city. The final sample included 33 children from five classrooms of a public school.

Limitations of the Study

This study is limited to developmental readers at third grade reading level from one public school in an eastern Oklahoma city.

The oral reading tests used in this study were only a sample of the measures which might have been used. Other tests might have yielded different results.

Assumptions

It is assumed that the instruments used in this study actually measure the factors they are designed to measure and are pertinent to the study.

It is assumed that the use of oral reading errors to establish levels of reading performance is valid and that the number of errors made by a child is indicative of the relative difficulty of the material for him.

It is assumed that each word in a story will afford to a given child an opportunity to make any one of several types of errors and that the errors are a random sample of reading behavior for an individual reader.

CHAPTER II

REVIEW OF THE LITERATURE

The literature related to oral reading error patterns and the comparison of those errors in increasingly difficult materials is very limited. This review will be confined to those studies investigating the effect of material difficulty on the patterns of errors made in oral reading.

Effect of Difficulty Level on Error Patterns

Monroe (1928) found that retarded readers at a given reading level and normal readers at the same level differed qualitatively in their error patterns. The retarded readers showed more reversals, repetitions, and total errors than their normal counterparts.

In 1970 McCracken and Mullen studied and tabulated the oral reading errors made by 170 students in grades one through six on the Standard Reading Inventory into seven error classifications: repetitions, words, omissions, additions, substitutions, and misread punctuation. At a first glance the data seemed to indicate a shift in the error pattern between the maximum instructional level and the first level of frustration. However, final analysis caused the authors to conclude:

No significant shift in error pattern seems to exist between successive levels if both are in frustration or both in instructional . . . This implies that instructional level errors should be used in determining instructional needs and that using errors made at frustration level to

determine instructional needs may lead to incorrect instructional programs. (McCracken and Mullen, 1970, p. 110)

Other authors came to different conclusions after studying error patterns and the difficulty of the material being read. Stafford (1967) studied 112 high achieving and 115 low achieving fourth grade readers at their ceiling level. The ceiling level was defined as the point at which a subject made seven or more errors within one paragraph of the Gray Oral Reading Test. She concluded that high achievers made a significantly higher frequency of errors in the categories of gross mispronunciation, mispronunciation, of syllable or accent, and mispronunciation of letters when compared with the low achievers. The suggestion was made that this evidence supported a different knowledge or application of knowledge pattern in these students. Stafford submitted that the high achievers had a more highly developed ability to utilize both visual and/or auditory analysis in decoding words, while the low achievers used fewer (if any at all) types of analyses in decoding unknown words. When the difficulty of the material decreased the low achievers did use more types of word recognition techniques. Error patterns were studied using the analyses of errors made on the Gray Oral Reading Test when successively more difficult passages were read.

Schale (1967) studied scores of students in even numbered grades two through twelve and compared the types of reading errors made on grade-level passages from the Gray Oral Reading Test by fifteen boys and fifteen girls. The students read two passages below grade placement level and two passages above grade placement level. All pupils were able to read the passage at grade level successfully. However, a few of the subjects at each grade level were unable to read one or both

of the above-grade-level paragraphs. Others were able to read considerably above their grade placement level.

For second grade readers more refusal errors were made as the difficulty of the material increased in Schale's (1967) study. Partial and gross mispronunciations steadily increased for subjects in grades two through twelve as the difficulty of the material increased. However, Schale reported that omission and repetition errors decreased as the material difficulty increased for all grade levels.

Schummers (1956) studied the error patterns of 237 third grade pupils to determine the effect of increasing difficulty levels. Regardless of reading ability, every subject attempted five stories from Lyons and Carnahan basal reader series ranging in readability from 1.7 for the first story to 5.6 for the fifth story. Errors were combined for different groups of students, but in no combination was the actual reading ability of the subjects taken into consideration.

Schummers (1956) reported that hesitation errors, omission of sounds errors, vowel errors, and reversal errors increased in proportion as the difficulty of the material increased. Spontaneous correction errors decreased in proportion as the difficulty of the material increased, but not to a significant degree.

Neither Schale nor Schummers controlled the relative difficulty of the material being read for each student so that the paragraphs above grade level may not have been as difficult for some students as the passages at or below grade level were for others. In particular, the large number of hesitation errors reported by Schummers, and the low word accuracy levels for the Low and Medium IQ boys indicate that even the simple and/or grade-level passages could have been difficult for

many of the subjects. An examination of the data would suggest that in Schale's study the difficulty level of the material did not affect the per cent of total errors of substitutions, insertions, and no response errors above the second grade. Both Berends (1971) and Kilgallon (1942) reported the opposite finding for substitutions and no response errors. Schale may not have controlled the difficulty level for each student as carefully as could have been desired.

Christenson (1966) compared the oral reading miscues on independent, instructional, and frustration-level passages of an informal reading inventory for 68 fourth, fifth, and sixth grade students. He combined errors on materials which were at, below, and above his students' individual reading levels as determined by his informal reading inventory. Using the word pronunciation and comprehension accuracy criteria proposed by Betts (1946), Christenson (1966) identified the independent, instructional, and frustration levels of each subject. However, his designation of independent and instructional levels as the highest levels at which either word recognition scores or comprehension scores were used as accuracy requirements could have changed the criteria to an uncertain extent. With the "either-or" requirement the literal interpretation of the "highest" and "lowest" levels resulted in six students' being assigned higher independent than instructional levels; seven subjects were assigned higher instructional than frustration levels; and one student was assigned an independent level which was four book levels higher than the instructional level, and three book levels higher than the frustration level.

Thus, it does appear that since errors from materials of varying relative difficulty levels could have been combined in several and/or

all of the studies, the differences in types of errors may have been concealed. If such incidences did occur, the effect of difficulty-level could have been confounded with the effect of materials.

Christenson (1966) reported that the incidence of no response errors, in fourth and sixth grade scores, and mispronunciations in fourth and sixth grade scores did increase as the difficulty of the material increased. As the difficulty of the material increased omission errors and repetitions errors for grades four through six decreased in incidence. While decrease in the omission error incidence was non-significant, the decrease in the repetition error events was significant. The latter event could perhaps be explained, at least in part, by the "either-or" criteria of word recognition or comprehension on the informal inventories. The decrease in repetition errors was significant only between the independent to instructional levels and between the independent to frustration levels.

In an earlier study, Killgallon (1942) found that more than 40 per cent more pupils made errors by guessing in frustration-level material on an informal reading inventory, and the guesses tended to become "extremely wild and inappropriate" (p. 106). In studying fourth grade poor and good readers Killgallon also observed that the number of students making refusal errors at frustration level (when compared with the number at instructional level) increased over 50 per cent. Much less frequently did attempts to pronounce the word precede the refusals.

In her study of 77 fourth grade disabled readers with average IQs, Berends (1971) used standardized tests to obtain oral reading errors for analysis. She (and others) administered the Durrell Analysis of Reading Difficulty, the Gates-McKillop Reading Diagnostic Test, Form 1,

and the Standard Reading Inventory to ascertain (among other types of data) patterns of oral reading errors. Berends secured data concerning oral reading errors at instructional level, as well as two succeeding levels of frustration. The B-S-R Error Analysis procedure was utilized. She found that all of the visual-auditory category errors, with the exception of the consonant-consonant errors, increased significantly as the difficulty of the material increased. Other categories of errors that increased as the difficulty of the material increased were syllabic division, directional confusion, structure errors (on the Durrell only), words aided, visual perception ending incorrect only, and visual perception middle incorrect only (on the Gates and Standard Reading Inventory only).

Berends (1971) concurred with Schale (1967) and Christenson (1966) in finding that repetition errors decreased as the difficulty of the material increased. She concurred with Schummers (1956) in determining that correction errors decreased as the difficulty of the material increased. Berends also found that addition errors decreased as the difficulty of the material increased, as did beginning incorrect only errors, and total parts incorrect errors on the Gates only.

Table I is a tabular presentation of the error categories that increase and decrease as the difficulty of the material increases. The grade or grades studied is indicated as well as the investigator's name. All the major studies cited in the review of the literature were included in the presentation of conclusions about these types of errors in oral reading.

Many studies have been conducted concerning various aspects of oral reading errors other than the effect of material difficulty. For

TABLE I
EFFECT OF DIFFICULTY OF MATERIAL ON ERROR PATTERNS

| Errors Which Increase With Increased Difficulty of Material | | | Errors Which Decrease With Increased Difficulty of Material | | |
|---|-------------|--|---|--------------------------|---------------------------------|
| Type of Error | Grade | Investigator | Type of Error | Grade | Investigator |
| No response or refusal | 2nd | Schale | Omissions | 2-12 | Schale |
| | 4th | Berends | | 4-6 | Christenson ^c |
| | 4th | Killgallon | Repetitions | 2-12 | Schale |
| 4th | Christenson | 4th | | Berends | |
| 6th | | 4-6 | | Christenson ^d | |
| (Hesitations) ^{ad} | 3rd | Schummers | Spontaneous Corrections | 3rd | Schummers |
| Mispronunciations | 4th | Christenson | | 4th | Berends |
| (Partial and Gross Mispronunciations) ^a | 2-12 | Schale | Additions | 4th | Berends (<u>Gates</u> only) |
| | 4th | Berends (<u>Gates</u> and <u>SRI</u>) | | | |
| (Omission of Sounds) (Vowel Errors) ^b | 3rd | Schummers | Sight words | 4th | Berends (<u>Gates</u> only) |
| (Consonant Errors) | 4th | Berends | | | |
| (Wild, inappropriate guessing) ^a | 4th | Killgallon | | | |
| Reversals | 3rd | Schummers | | | |
| | 4th | Killgallon | | | |
| | 4th | Berends | | | |
| Directional Confusion ^{ad} | 4th | Berends | | | |
| Structure Errors ^{ad} | 4th | Berends (<u>Durrell</u> only) | | | |
| Syllabic Division ^{ad} | 4th | Berends | | | |

^aWord or phrase within parenthesis refers to the term used by the Investigator for the miscue.

^bKinds of mispronunciation error found to increase with story difficulty.

^cNon-significant.

^dSignificant--difference between Independent-Instructional and Independent-Frustration levels only.

instance, Monroe (1928) studied the types of oral reading errors among disabled readers. She reported that faulty sounding of consonants and vowels are more important errors to consider, from the standpoint of progress in reading, than are errors such as omitting words or parts of words, adding superfluous words, substituting words, or repeating words often.

In 1930 Payne investigated errors made while orally reading words in isolation (word lists) and errors made while orally reading contextual material. After analyzing the errors made by 400 children in grades two through five, Payne reported that slightly fewer errors were made on the contextual material as compared to the errors made on words in isolation.

Other investigators compared the types of errors made on standardized reading tests. Gilmore (1947) studied the relationship between certain types of errors made on the Gilmore Oral Reading Test and the Stanford Reading Test. He concluded that word substitutions were the most important type of errors analyzed. Gilmore reported that substitution errors tended to be related to poor reading comprehension (both oral and silent), to poor oral reading scores, and to slow oral reading rate; these relationships were true for errors made on both standardized tests he studied.

Herlin (1963) examined the oral reading errors made on the Monroe Diagnostic Reading Examination, and compared them with the errors made on the Durrell Analysis of Reading Difficulty. He stated that

The correlation comparison of error types from Monroe to Durrell was inconclusive, showing high enough correlations to be significant, but not high enough to state that the error types on each test were the same. (1963, p. 112)

Another researcher investigated the effect of length of passage on the types of errors made while reading orally. Stuever (1969) reported after analyzing errors made in oral reading by 76 children who were disabled readers in fourth grade, that the length of passages read is very important to the types of errors made. She found that unless a passage of at least 150 words was read by a student the proportion of specific kinds of observed errors as well as the density and rate of these errors would be distorted. Stuever's conclusion resulted in passages of at least 200 words being used in the present investigation.

Summary

Several researchers have reported that error patterns vary according to the level of difficulty of the material (Schummers, 1956; Schale, 1964; Christenson, 1966; and Berends, 1971). Only one of these investigators adequately controlled, or reported, the relative difficulty level of the test selections for the individual subjects. Those researchers who did not control the relative difficulty of the test selections adequately for each student possibly distorted or obscured the results.

From a review of the literature, it appears there is justification for an investigation of the commonality of oral reading error pattern changes as the difficulty of the material increases.

CHAPTER III

DESIGN AND METHODOLOGY

This chapter contains a description of the population of the study, the testing procedure, the test instruments used in collecting the data, and the statistical treatment of the data.

Description of the Population

The population for this study consisted of the second and third grade students who were considered to be third grade developmental readers, that is, reading not more than three-fourths of a year below or above 3.25 reading level. All the students came from one elementary school in an eastern Oklahoma city of approximately 40,000 inhabitants. The school, with 625 students, was one of the largest of twelve elementary schools in the city system. Thirty teachers were employed at this school. There were four classrooms of each elementary grade with a cross section of socio-economic levels represented. The population was primarily Caucasian, but also included pupils of American Indian, Negro, and Oriental extraction.

The reading programs utilized basal readers. Primarily a strong phonics-oriented basal series was used, though some teachers did use less phonics-oriented basals for some students.

Pupils meeting the criteria for the study sample were identified through a two-step process:

1. Teachers in each of the eight classrooms were asked to identify the students that were reading between 2.5 and 4.0 in basal readers.

2. The Standard Reading Inventory, Form B was administered to each of the readers identified by the classroom teacher. Subjects were taken from the classrooms to a suitable area where the testing could proceed undisturbed, with only the subject and the investigator present. The children were told the purpose of the testing and asked if they would be willing to assist the examiner. All of the children agreed to participate in the study.

Every student whose instructional and frustration reading levels were found to be at or between 2.5 and 4.0 was administered extended oral reading to, again, find the instructional and frustration levels. The Stanford Diagnostic Reading Test and the first two subtests of the Silent Reading Diagnostic Test (Bond-Balow-Hoyt) were given a few days later.

The sample, as identified by the first step above, consisted of 63 children. This number was subsequently lowered to 34 because of the failure to meet the original criteria or incomplete test data. Pupils from five of the eight original classrooms of second and third graders were included in the study.

Testing Procedures

The Standard Reading Inventory was administered by the investigator in a suitable area where testing could proceed undisturbed, with only the subject and the examiner present. The extended oral readings were individually administered by trained examiners from the Oklahoma State University Reading Center. In each testing situation only the

examiner and the subject were present. During the test administrations, the examiners recorded the miscues made by the subjects on copies of the test selections while an audio-tape recording was made of the selection being read. The errors made and times required for reading were rechecked by the examiners and by this investigator.

After the screening test (Standard Reading Inventory) and the extended oral readings were given individually, the group tests were given by the investigator. One whole classroom of second grade students met the original criteria and were administered the Stanford Diagnostic Reading Test, Form B, and the first two subtests of the Silent Reading Diagnostic Test (Bond-Balow-Hoyt) in their classrooms. The remainder of the sample was gathered into the Library and given the same tests. Only one group test was given on any day. The time required for the testing procedure from the beginning to finishing was approximately two weeks. Every subject encountered two examiners in the testing process and the testing sequence was the same for all students. First, the screening test (Standard Reading Inventory) was given by the investigator, then the extended oral readings were administered by examiners from Oklahoma State University Reading Center, and last, the group tests (Stanford Diagnostic Reading Test and Silent Reading Diagnostic Test) were administered by the investigator.

Instruments Used

Standard Reading Inventory, Form B, (1966), (SRI)

This test was used as a screening device to identify pupils who were considered to be developmental readers. There are two equivalent

forms. The SRI is an individually administered reading test for measuring reading achievement at pre-primer through seventh reader levels. Each form contains eleven word lists for testing word recognition in isolation, eleven stories for oral reading, and eight stories for silent reading. Comprehension of the oral and silent reading passages is tested by inference and detail questions. The following levels are identified: independent, instructional, and frustration. Only the instructional and frustration levels were determined as pertinent to this study.

According to the manual:

Two studies of concurrent validity have been made. The instructional reading level of the Standard Reading Inventory and the California Reading Test were compared for 79 children completing second grade. The correlation was .87. The results of the reading comprehension and reading vocabulary sections of the Stanford Achievement Tests (Elementary Battery, Form 1) and the instructional reading level and the vocabulary in isolation scores on the Standard Reading Inventory were compared for 77 children completing third grade. The correlations were .77 between the Stanford comprehension and the SRI instructional reading level, and .88 between the vocabulary measures.

Reliability

Reliability was demonstrated by having two examiners administer Forms A and B of the Standard Reading Inventory to 60 children, 30 boys and 30 girls, divided equally among grades one through six. Twelve Pearson product-moment correlations were computed using the results. The highest correlation was .99, the lowest .68, and the median .91. All correlations were significantly different from zero ($p < .001$). Further evidence of reliability was obtained in a study of second grade children who took both forms of the SRI. Correlations of the instructional reading level was .95. (Standard Reading Inventory Manual, 1966)

The Spache (1968) and the Dale-Chall (1948) Readability Formulas were used in analyzing the stories. The difficulty levels of the stories were also evaluated subjectively by 25 reading experts.

In the present investigation, the Form B oral reading passages at the 2.5 level through the 4.0 level were used as the screening device to ascertain the instructional and frustration levels of oral reading for each subject. Both the instructional and frustration reading levels of each subject had to fall within the 2.5 through 4.0 range of reading ability to meet the criteria for this study.

Stories of Stuever Reading Test, (1969)

The stories in this test were adapted and used by Stuever (1969) in her study. Her research involved many schools where different basal readers were used, so it was felt that the stories should be graded, unfamiliar materials (Johnson, 1965; Williams, 1963). The content of the stories resembles basal reader materials.

The primer and the 2.0 stories are longer than basal reader stories at the levels used, but this was controlled for since length was the purpose of Stuever's study. The 1.5 level story was adapted from "Mr. Queeps Forgot" in Sunny and Gay by Ardith Snyder Turner, published by Bobbs Merrill Company. "To See the King," the 2.0 story, was adapted from the Sword in the Tree by Clyde Robert Bulla, Thomas Y. Crowell, publisher. "How Baseball Began," written at the 3.0 level, was adapted from How Baseball Began in Brooklyn, by LeGrand Henderson, Abington Press. "The Mystery of the Creaking Stairs," by Charlotte Jeanes, published in the Lyons and Carnahan Curriculum Enrichment Series, New Trails, was used as the basis for the 3.6 story. The story, "Old Grouch Moves In," written at the 4.0 level by Rutherford Montgomery, was published by Doubleday and Company in the book Kildee House. "Mickey Mantle," by Gene Schoor, published in the book Mickey Mantle

of the Yankees by G. T. Putnam's Sons was used as the basis for the 4.6 story. "Westward Ho!", "Best Known Member of the Family," and "Operation Sunshine," were all published in the book From Codes to Captains by Harper, Row Publishers. These stories represent levels 4.95, 5.52, and 5.96 respectively.

Readability levels of the stories were established using the Spache (1953) formula so that these levels would compare in readability with the equivalent passages on the SRI. Approximately the same number of sentences and the same number of unfamiliar words were used in each of the 100 word samples. It was assumed that this would make each of the 100 word samples as equal in difficulty as possible within the limits of the error of the Spache Readability Formula.

Silent Reading Diagnostic Test (Bond-Balow-Hoyt) (1970)

This test was designed as a group test to diagnose various skills which are determined as necessary for success in reading. Eight subtests examine the following reading skills in a silent reading situation: error patterns as determined by recognition of words in isolation as well as words in context while reading silently, subtests one and two; recognition techniques, subtests three, four, and five; phonic knowledge, subtests six, seven, and eight. Only subtests one and two were administered for this study.

The authors of the test indicate that the standardization procedure was obtained from regular classrooms where the majority of students were making normal progress in reading development. These classrooms were representative of all socio-economic levels from ten cities in three states. The total sample tested was 2,500 students

directly representative of approximately 38,000 students because of the stratified sampling procedure used in the selection of the students to be tested.

The Manual states:

Reliability information was obtained by use of the split-half procedure for a sample of two randomly selected classrooms of third grade pupils for Tests 1, 2, 6, 7, and 8; and from two randomly selected classrooms of fourth grade pupils for Tests 3, 4, and 5.

The reliability coefficients for Test 1 and Test 2 were .95 and .93 respectively. The reliability coefficient for the sum of tests one and two is .97. The remainder of the reliability coefficients are: Test 3--.93, Test 4--.80, Test 5--.90, Test 6--.92, Test 7--.97, and Test 8--.85.

The tests have direct primary validity since the tasks required of pupils are the kinds which are required of the developmental reader in everyday use of reading, according to the authors. The intercorrelation coefficient between tests one and two in second grade is .73, while the intercorrelation coefficient between tests one and two in third grade is .88. The coefficients indicate the relevance of these skills to word recognition, but not highly enough to report that they are testing the same thing, according to the manual.

The manual indicates that the validity of greatest importance in a diagnostic test is its relevance to the details of the instructional area it claims to evaluate. It was noted that the Silent Reading Diagnostic Test has proven to be of practical assistance to teachers over the twenty-year period of its existence.

Stanford Diagnostic Reading Test (1966)

This test of seven subtests, covering different skills determined essential for success in reading, was constructed to ascertain the patterns of strengths and weaknesses rather than just to determine a grade level of performance.

Validity of the test is based on a survey of over 200 factorial, experimental, and survey-type studies published in the various professional journals and related types of communications. The subtests in SDRT represent the authors' judgments as to what these studies reveal about reading in the elementary grades. For grade three the median subtest intercorrelation is .61 as compared with the median subtest reliability coefficient of .94. The reliability was determined through the use of the split-half procedure.

The two forms of the SDRT were standardized in terms of student performance on the Reading Tests of the Stanford Achievement Test. It was felt that this procedure would allow for the development of a stable set of norms from relatively small but carefully selected samples of students. The tests were administered to 12,000 students in six school systems with a two week interval between tests. Administration of the test was conducted by classroom teachers.

An item analysis was determined using part of the norming group. Comparison of the mean performance of item analysis (IA) and standardization groups (Std) for third grade on the subtests pertinent to this study is shown in Table II.

During the standardization process the correlations between SDRT (Form W) subtests and the Stanford Achievement Test: Reading Tests was obtained. For third grade readers the correlations between the

Paragraph Meaning subtest of the Stanford Achievement Test and the following subtests of the SDRT are reported as auditory discrimination-- .65, syllabication-- .55, beginning and ending sounds-- .71, blending-- .67 and sound discrimination-- .68.

TABLE II

COMPARISON OF THE MEAN PERFORMANCE OF ITEM ANALYSIS (IA) AND STANDARDIZATION GROUPS (STD)

| Subtest | Mean Performance | |
|-----------------------------|------------------|------|
| | IA | Std |
| Auditory Discrimination | 32.7 | 32.5 |
| Syllabication | 12.1 | 12.7 |
| Beginning and Ending Sounds | 27.3 | 28.2 |
| Blending | 26.2 | 26.2 |
| Sound Discrimination | 23.2 | 23.2 |

A study at the third grade level found the subtests to correlate "positively" with the teacher's grouping for reading instruction. In a study of the syllabication skill, the syllabication score of an experimental syllabication test was found to correlate .85 with the ability to divide words into syllables with vertical dividing lines.

It is evident that the SDRT correlates very positively with the Stanford Achievement Test: Reading Tests. There appeared to be few

standardized tests with norming procedures that could compare with the procedure used in standardizing the Stanford Achievement Tests.

B-S-R Error Analysis

The B-S-R Error Analysis was devised by Berends, Stuever, and Ray at the Oklahoma State University Reading Center as a means of combining the visual-perceptual approach to error analysis of Gates with the sound-symbol accentuation of Monroe.

By means of the B-S-R Error Analysis system, errors from the oral reading paragraphs and stories were classified into six major categories: visual perception--word parts, directional confusion, visual-auditory, syllabic division, structure, and behavioral characteristics.

Visual Perception--Word Parts. Errors were classified in this category if the response to the stimulus word was made instantaneously with no attempt at sounding out the word. The assumption was that the child looked at one or more parts of a word and said another word which the part(s) suggested.

1. - + + Middle and end correct, beginning incorrect: there, where, hungry-angry.
2. + - + Beginning and end correct, middle incorrect: smelling-smilling, serve-slave.
3. + + - Beginning and middle correct, end incorrect: (s, ed, ing were classified under structure) you-your, not-nor.
4. - - + End correct, beginning and middle incorrect: pillow-window, thought-forget.

5. + - - Beginning correct, middle and end incorrect:
nothing-neither, well-with.
6. - + - Middle correct, beginning and end incorrect:
hamster-champion, danger-tangle.
7. - - - Word completely wrong; also, error on one-or-two
letter stimulus word: was-and, away-up.

Directional Confusion. Errors were classified in this category if the order of letters or words was incorrect and/or letters were rotated.

1. Rotations: bounding-pounding, dog-boy.
2. Reversals: whole and partial reversals: was-saw, left-felt;
word sequence errors: (you will).

Visual-Auditory. Errors were classified in this category if the response was incorrect after a discernible attempt to "sound it out." Visual-auditory errors reflect "faulty perception of sound-symbol relationships, faulty application of phonetic principles, or lack of application of alternative word recognition techniques to sound-symbol relationships" (Ray, 1969).

1. C Error on a single consonant: raced-raised.
2. CC Error on a consonant blend or digraph:
knife-knight, scrait-strait.
3. V Error on a single vowel: less-loss.
4. VV Error on vowel digraphs or diphthongs:
lay-lie, aut-out.
5. CCVV Error on both vowels and consonants:
important-improved, some-submit.

Structure. This category included contractions, compound words, inflexional endings, and prefixes and suffixes.

Syllabic Division. Error caused by wrong syllabic division and/or accent: ex-ae-md--examined.

Behavior Characteristics. This category included omissions of whole words, additions of whole words, words aided, repetitions, and corrections.

Repetitions, additions, and omissions of one or more consecutive words were counted as one error only. Repetitions as a result of a correction were not counted as errors. Speech variants as a result of a dialect or reflected by the use of another language were not considered errors.

Errors were entered in only one category. Errors made in the first 25 word section of each selection were not analyzed. Stuever (1969) reported that the errors occurring in the first 25 words of a selection may produce an unrealistically high ratio of errors to total words read, thus causing the instructional level of the student to be lower than it would have been had an adequate number of words been read.

Statistical Techniques Used in the Treatment of the Data

The Spearman Rank-Order Correlation (Rho)

To determine whether or not the error patterns were similar on the extended oral readings at instructional and frustration levels, the

error-types which were made at each of the above performance levels on the extended oral readings were ranked according to their relative frequency of occurrence. By using the Spearman Rank-Order Correlation, the degree of relationship, or overall agreement, among various rankings was determined.

Coefficients of correlation were also calculated between the errors made on the pertinent subtests of the Stanford Diagnostic Reading Test and the errors made on the instructional and the frustration levels of the extended oral readings. Test 1 of the Silent Reading Diagnostic Test is a test for recognition of words in isolation, while Test 2 of the same test examines the ability to recognize words in context. Coefficients of correlation were determined between the total number of errors made on Test 1 and the total number of errors made at instructional and frustration levels on extended oral readings, as well as between the total number of errors made on Test 2 and the total number of errors exhibited at instructional and frustration levels on the extended oral readings.

The hypotheses were tested by computing on a calculator 21 coefficients of correlation according to the formula in Brunning and Kintz (1968, p. 156):

$$\text{rho} = 1 - \frac{6 \sum D^2}{N(N^2 - 1)}$$

where D = the difference score between each X and Y score, and

N = the number of pairs of scores.

Correction for tied ranks was made when it was necessary (Brunning and Kintz, 1968, p. 157).

The significance of rho was determined by reference to a table of critical values of Pearson's r Correlation Coefficient for Five Alpha Significance Levels (Bruning and Kintz, 1968, p. 229).

Summary

This chapter has described the population used in the study and the test instruments utilized in collection of the necessary data for testing the hypotheses. In addition, the statistical techniques employed in the treatment of the data have been defined.

CHAPTER IV

TREATMENT OF DATA AND ANALYSIS OF RESULTS

This study was concerned with the effect of difficulty of material upon the patterns of errors in oral reading among third grade developmental readers. It included an analysis of oral reading errors made by the students at instructional and frustration levels on extended oral readings. Errors made at instructional level on the extended oral readings were compared with the errors made on two standardized tests. Comparisons of the resulting error patterns were made both between tests and between categories of errors within tests. Similar comparisons between each of the standardized test error categories and the error categories at instructional and frustration levels of the extended oral readings were made.

The hypothesis related to the differences between the error patterns on the instructional level of the extended oral readings and the Stanford Diagnostic Reading Test error patterns will be first examined. Next, the hypothesis concerning the error patterns at instructional level of the extended oral readings and those error patterns exhibited on the Silent Reading Diagnostic Test will be discussed. Finally the hypothesis related to the difference between error patterns on the instructional level of the extended oral readings and those on the frustration level will be tested.

Tests of the Hypotheses

Hypothesis 1: There is no significant correlation between the error patterns on the instructional level of the extended oral readings and the error patterns indicated on certain subtests of the Stanford Diagnostic Reading Test.

To test this hypothesis a correlation coefficient was computed between pertinent subtests of the Stanford and those corresponding types of errors on the instructional level of the extended oral readings. This data is reported in Table III. None of the correlation coefficients reached significant levels, as indicated in Table III.

TABLE III

CORRELATION COEFFICIENTS COMPUTED BETWEEN STANFORD SUBTESTS AND CORRESPONDING ERROR CATEGORIES ON EXTENDED ORAL READINGS

| Subtest and Error Category Correlated | Correlation Coefficient | |
|---|-------------------------|-------------------|
| | Instruction Level | Frustration Level |
| Auditory Discrimination and Visual-Auditory | .1972 | .0323 |
| Beginning Sounds and Visual-Auditory | .2039 | .1494 |
| Ending Sounds and Visual-Auditory | .0377 | .1287 |
| Blending and Visual-Auditory | .0512 | .4379* |
| Sound Discrimination and Visual-Auditory | .0453 | .1513 |
| Syllabication and Syllabication | .1718 | -.0215 |

*p < .01

When means for each of the categories were computed differences were observed between all means of the subtests of the Stanford and the instructional level error categories of the extended oral readings except between the means of the subtest of Ending Sounds and the error category of visual-auditory miscues. The lack of difference between these two means may have been affected by the small raw scores in the Ending Sounds Subtest. Errors in oral reading were determined by use of common criteria. The mean of the Ending Sounds Subtest was considerably below the means of the other subtests of the Stanford, as was indicated in Table IV. The differences between the means, as reported on Table IV are discernable.

TABLE IV

MEANS OF THE SUBTESTS OF THE STANFORD AND ERROR CATEGORIES
OF EXTENDED ORAL READINGS

| Subtest and Error Category Compared | Performance Level | | | |
|--|-------------------|-----------------|----------------|-----------------|
| | Instructional | | Frustration | |
| | First Category | Second Category | First Category | Second Category |
| Auditory Discrimination and Visual-Auditory | 18.0 | 15.1 | 18.0 | 11.9 |
| Beginning Sounds and Visual-Auditory | 10.7 | 2.4 | 10.7 | 11.3 |
| Ending Sounds and Visual-Auditory | 2.2 | 2.4 | 2.2 | 11.3 |
| Blending and Visual-Auditory | 6.9 | 2.4 | 6.9 | 11.3 |
| Sound Discrimination and Visual-Auditory | 11.2 | 2.4 | 11.2 | 11.3 |
| Syllabication and Syllabication | 11.9 | 0.8 | 11.9 | 0.0 |

A correlation coefficient was also computed between the pertinent subtest of the Stanford and the corresponding error categories of the extended oral readings at frustration level. An inspection of Table III indicated that none of the correlations between the subtest scores of the Stanford and the scores on error pattern categories of the extended oral readings at frustration level reached a significant level of confidence except the correlation between the subtest of Blending and visual-auditory errors. This correlation was significant at the .01 confidence level.

Table IV reported the means of the scores on the subtests of the Stanford and the means of the scores of the error categories on the frustration level of the extended oral readings. The differences between the means of the subtest scores and the error category scores at frustration level as compared with those differences at instructional level indicate some change. Only the levels between the following pairs of means remained constant: Auditory Discrimination and visual-auditory, Blending and visual-auditory, and Syllabication and Syllabication.

The subtests of the Stanford measure, primarily, silent reading of words in isolation, while the extended oral reading error categories indicate the miscues made by the subject while reading orally at sight, that is without prior reading of the selection. Thus, the null hypothesis of no significant relationship differences among the error pattern categories found on the extended oral readings at instructional level and the pertinent subtests of the Stanford can be rejected.

Hypothesis 2: There is no significant correlation between the error patterns on the instructional level of the extended oral readings

and the error patterns indicated on the subtests of the Silent Reading Diagnostic Test.

Because the two subtests of the SRDT measure the same types of errors, each of the subtests (called Test 1 and Test 2) was compared separately with the data from the extended oral readings on the instructional level.

To test the second hypothesis, correlation coefficients were computed between the error patterns of Test 1 on the SRDT and combinations of those subcategories of the visual perception category which corresponded to the type of error identified on the SRDT. On Test 1 the Initial error category corresponded with the - + +, - - +, and - + - subcategories of the visual perception category of the B-S-R Error Analysis system. The Medial error category corresponded with the + - +, - - +, and + - - subcategories of the visual perception category of the B-S-R. The Ending error of the SRDT corresponded with the + + -, + - -, and - - - subcategories of the visual perception category on the B-S-R. Orientation errors on the SRDT were compared with directional confusion errors on the B-S-R. The correlation coefficients are reported on Table V for error categories on both Test 1 and Test 2 of the SRDT and the corresponding subcategories of the visual perception errors on the B-S-R. Inspection of Table V indicated that error scores of Orientation (SRDT) and Directional Confusion (B-S-R) had a correlational coefficient that was significant at the .01 confidence level on Test 1 (SRDT). However, the pattern of significance changed when comparing Test 2 error scores and the corresponding error scores on the instructional level of the extended oral readings. This change was reported in the correlation coefficient of .4889 between the Medial error

TABLE V

COMPARISON OF ERRORS INDICATED ON THE SRDT AND ERRORS ANALYZED BY THE B-S-R AT INSTRUCTIONAL LEVEL

| Error Type of <u>SRDT</u> and B-S-R at Instructional Level | Subtest of the <u>SRDT</u> | | | | | |
|---|----------------------------|---------------------|--------------------|----------------------------|---------------------|--------------------|
| | Test 1 | | | Test 2 | | |
| | Correlation Coefficient | Means of Raw Scores | | Correlation Coefficient | Means of Raw Scores | |
| | | First Category | Second Category | | First Category | Second Category |
| Initial and VP (1,4,6) B-S-R | .0869 | 4.2 | 1.02 | .2374 | 4.1 | 1.02 |
| Medial and VP (2,4,5) B-S-R | .0624 | 4.7 | 2.67 | .4889* | 2.8 | 2.67 |
| End and VP (3,5,6) B-S-R | .0219 | 3.1 | 1.65 | -.0606 | 3.3 | 1.65 |
| Orientation and Directional Confusion on B-S-R | .4338* | 3.0 | .7 | -.0091 | 3.5 | 1.4 |

*p < .01

category of the SRDT and the subcategory errors of the visual perception category of the B-S-R. Significance at the .01 confidence level was indicated for this correlation coefficient.

The means of the error-type scores were further compared. Neither the differences among paired means on Test 1 nor Test 2 reached a significant level, indicating no significant differences between the mean scores of the error types.

Examination of Table V data denoted that the null hypothesis for certain error patterns can be rejected. The null hypothesis cannot be rejected for Orientation and Directional Confusion errors on the SRDT (Test 1) and B-S-R respectively. Coefficients for error patterns of Medial position on the SRDT (Test 2) and visual perception subtests (2,4,5) on the B-S-R also indicate that the null hypothesis must not be rejected. However, the null hypothesis can be rejected for all other error categories compared between the SRDT and the B-S-R at instructional level.

Hypothesis 3: There is no significant correlation between the error patterns found on the instructional level of the extended oral readings and the error patterns found on the frustration level of the extended oral readings.

To test the hypothesis correlation coefficients were determined between total category scores of each of the major categories on the B-S-R, from analyzation of the extended oral readings, at both instructional and frustration levels. Results of these computations are tabulated in Table VI.

The null hypothesis of no difference between error patterns at the instructional and frustration levels found on the extended oral readings

was not rejected for all error categories except visual perception. The null hypothesis is rejected for the error category of visual perception.

TABLE VI

COMPARISON OF ERROR PATTERN DATA FROM EXTENDED ORAL READINGS
BETWEEN INSTRUCTIONAL AND FRUSTRATION LEVELS

| Error Categories | Item | | |
|----------------------------|-------------------------|-------------------|-------------------|
| | Correlation Coefficient | Mean Raw Scores | |
| | | Instruction Level | Frustration Level |
| Visual Perception | .2275 | 15.1 | 11.9 |
| Directional Confusion | .5758** | .7 | 1.4 |
| Visual-Auditory | .4040*** | 2.4 | 11.3 |
| Structure | .2848**** | 2.1 | 3.9 |
| Behavioral Characteristics | .5827* | 16.7 | 10.6 |
| Words Aided | .7065* | 7.5 | 14.0 |
| Syllabication | .8793* | .8 | 0.0 |

*p < .001
 **p < .01
 ***p < .05
 ****p < .10

Though the rank of the scores did not change significantly, as the correlation coefficient indicated, the difference between the mean raw

scores did indicate a change in the total number of errors made in some categories. The total number of errors made in the visual perception, the directional confusion, the structural, and the syllabication categories did not significantly change between the instructional and frustration levels of performance in oral reading. There were more behavioral errors on the instructional level than on the frustration level. However, the visual-auditory and words aided categories had more errors on the frustration level than on the instructional level.

Summary

This chapter has presented the statistical results from the treatment of the data. Correlation coefficients were used to indicate the relationship between error patterns as indicated on extended oral readings at both instructional and frustration levels, and the error patterns found on the extended oral readings at instructional level and error patterns found on subtests of two standardized tests. A significant relationship was found to exist between eight of the 21 pairs of error categories compared.

The correlation coefficients computed between the error patterns indicated on subtests of the Stanford and error patterns of the instructional level oral readings revealed that the null hypothesis of no difference between error patterns was to be rejected. The error patterns found in silent reading on the Stanford differ, but not significantly so, from the error patterns found on the instructional level of the extended oral readings. The means of the raw scores of error patterns paired do differ significantly with the exception of one error category, ending sounds as compared with visual-auditory errors.

The comparison of error patterns found on the SRDT and those analyzed by the B-S-R at instructional level revealed that the hypothesis of no difference between the error patterns of these two measures had to be rejected for all of the categories except two. Orientation on Test 1 and Directional Confusion category, and Medial Sounds on Test 2 and VP (2, 4, 5) of the B-S-R category could not be rejected. No difference between any of the paired mean scores was indicated.

The null hypothesis of no difference between error patterns on the instructional level and those of the frustration level of the extended oral readings was not rejected for all categories except that of visual perception. For the category of visual perception the null hypothesis is rejected.

When the mean raw scores were compared, other types of patterns emerged. While the ranks of scores did not change significantly, the differences between the means of the raw scores did, for some categories. Significantly, more errors were made on the frustration level than on the instructional level in the category of visual-auditory, as well as the category of words aided. More errors of the behavioral type were made on the instructional level than on the frustration level. Other error categories did not change significantly.

Table VII is a presentation of the type of error made and its relationship to each hypothesis.

TABLE VII

COMPARISON OF ERROR TYPE FOR EACH HYPOTHESIS

| Hypothesis | Type of Error | | | | | | |
|---------------|-------------------|-----------------------|-----------------|--------------|------------------|--------------|--------------|
| | Visual Perception | Directional Confusion | Visual Auditory | Structure | Behavioral Error | Words Aided | Syllab. |
| One | Not Rejected | Not Rejected | Not Rejected | Not Rejected | Not Rejected | Not Rejected | Not Rejected |
| Two Test 1 | Rejected | Not Rejected | | | | | |
| Test 2 | Not Rejected | Rejected | | | | | |
| Three | Rejected | Not Rejected | Not Rejected | Not Rejected | Not Rejected | Not Rejected | Not Rejected |

CHAPTER V

SUMMARY AND CONCLUSIONS

General Summary of the Investigation

This study was concerned with the shift of error pattern categories between instructional and frustration levels among third grade developmental readers.

The sample consisted of second and third grade readers not more than .75 of a grade level from 3.25 reading level, that is reading on an instructional and frustration level between 2.5 and 4.0 reading level. These readers were considered to be developmental readers. After teacher indication of reading levels for each subject, the Standard Reading Inventory was administered to ascertain the instructional and frustration reading level of each subject. The final sample consisted of thirty-three children.

Errors made while reading both silently and orally were obtained from reading tests. Oral reading miscues were determined as the students read extended oral readings. These oral readings were tape-recorded. The silent reading errors were ascertained through the use of two standardized tests, the Stanford Diagnostic Reading Test and the Silent Reading Diagnostic Test. Only the first two subtests of the Silent Reading Diagnostic Test were administered but all the subtests of the Stanford were administered.

Errors made on instructional and frustration levels were collected from the extended oral readings. The B-S-R Error Analysis procedure was utilized in examining the data. Comparisons were made between the error categories exhibited on each of the standardized tests and instructional level error patterns.

The B-S-R Error Analysis has 21 possible error subcategories classified into six major categories. Correlation coefficients were computed between the error classifications of each of the standardized tests and the appropriate type of error type as indicated on the instructional level of the extended oral readings. Comparisons were made between 33 pairs of categories of error patterns.

Conclusions

Results of the study indicate that the error patterns found on the Stanford test during silent reading are different from those found on the instructional level of the extended oral readings, but not significantly so, with the exception of one subtest pair that compared errors found on the frustration level of the extended oral readings. That one subtest pair, Blending and Visual-auditory, were found to have a significant relationship.

The means of the Stanford raw scores of error patterns and the extended oral reading error patterns (on instructional level) were all found to be significantly different except the comparison between the means of the ending sounds and visual auditory categories.

When scores of the other silent reading test, the SRDT, were compared with the extended oral reading test, much the same pattern emerged. The error patterns of the SRDT (Test 1) were not significantly

similar except the comparison made between Orientation and Directional Confusion. That particular subtest relationship was significant at the .01 confidence level. When Test 2 of the SRDT was compared with the error patterns of oral reading at instructional level, the comparison of Medial Position errors reached a relationship significance level of .01. With the exception of these subtests of the SRDT these silent reading standardized tests do not have error patterns indicated that are similar to the error patterns of oral reading. Perhaps standardized pencil and paper tests used to detect problems in reading do not tell us much about the actual problem at all.

The results of the comparison between errors made on instructional level and those made on frustration level did indicate a shift in error patterns, though, perhaps, not in the manner expected. While correlation coefficients were generally high, indicating that the relative ranking of scores remained constant, the differences between the mean raw scores indicated that a significantly greater number of errors were made in the visual-auditory category on frustration level. This was also true of the words aided category.

Figure 1 shows how the means of the error categories on both instructional and frustration levels compare. There is a change of error pattern when the difficulty of the material is considered.

This study indicates that when diagnosis of a student's reading problem is considered, the errors made on frustration level in oral reading may require a different type of remediation than those errors found on the student's instructional level of oral reading. If the difference between immediate response and mediated response is valid,

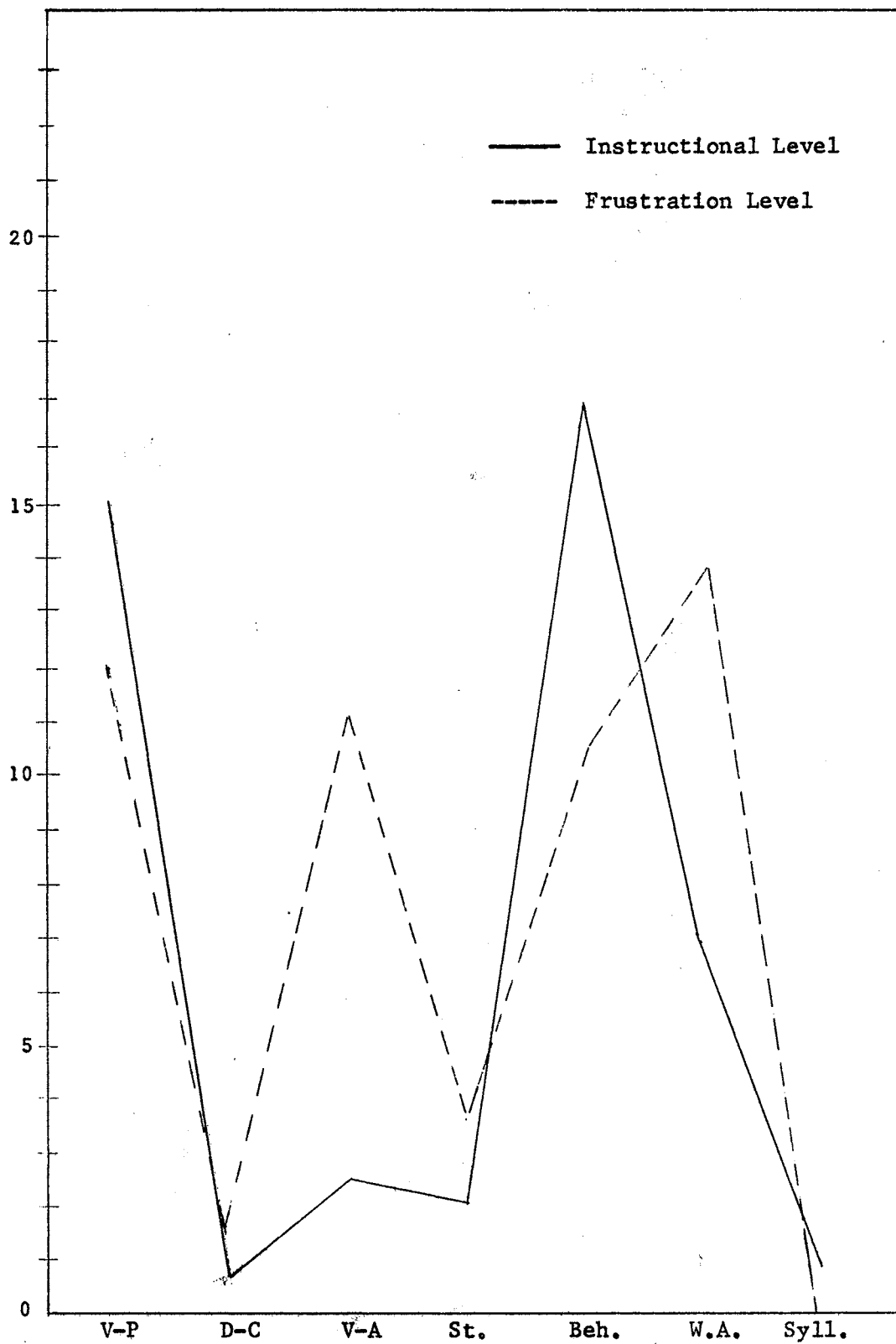


Figure 1. Comparison of Error Type Raw Scores on Extended Oral Readings

remedial instruction should consider the errors made at frustration level.

Table VIII presents the changes in error pattern made during this study from test to test, where comparisons were possible.

While a change in error patterns is observable in contextual material, this phenomenon may not be observable if word lists are used rather than paragraphs. Many teachers still use word lists such as the Dolch List or word lists in the back of basal readers. It would be advantageous to the classroom teacher to know if a change in error patterns occurs when word lists are read orally.

Recommendations

1. It is recommended that a study of error patterns be made between errors on words in context and errors on word lists to determine the existence of a shift in error patterns between instructional and frustration levels.
2. It is recommended that this study be replicated with the rate of reading being used as a limiting factor in the screening process and/or in the level of reading determinations on the extended oral reading.
3. It is recommended that this study be replicated using readers at fourth or fifth grade reading level.

TABLE VIII

CHANGE OF ERROR PATTERN RELATIVE TO INSTRUCTIONAL AND FRUSTRATION LEVELS

| Test | Change in Error Pattern | | |
|---------------------------------|---|---|---|
| | Increased | Remained the Same | Decreased |
| <u>SRDT</u> , Test 1 and Test 2 | Orientation Errors | Initial Position Errors Ending Position Errors | Medial Position Errors |
| Extended Oral Readings | Directional Confusion Errors Visual-auditory Errors Structural Errors Words Aided Errors | Syllabication Errors | Visual Perception Errors Behavioral Errors |

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