A QUALITATIVE ANALYSIS OF ORAL READING MISCUES

MADE BY

READERS OF FOURTH AND SEVENTH GRADE INSTRUCTIONAL LEVELS

by

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Preface

In setting up programs to remediate children whose reading development is lagging, we need to know specific information about their disabilities beyond the quantitative information that counting errors may give. Knowledge is needed regarding the qualitative differences between disabled and normal readers. Disabled readers may attack the reading process like younger children who read at the same level or like children of their own chronological age. There have been no previous developmental studies analyzing miscues in a qualitative manner. The present study will attempt to identify oral reading miscues which differentiate normal from disabled readers. These error patterns may be useful in setting up remedial programs for the disabled reader.
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Chapter I

Statement of the Problem

People have long been aware of the presence of reading disabilities among children. The concern of educators has been the identification of these children and the designing of appropriate programs to help improve their reading skills. Reading disability has traditionally been defined on a quantitative basis by comparing a child's present reading ability with expected achievement based on some measure of intelligence. For example, children whose measured intelligence falls within the average range would be expected to yield average reading ability. A child whose measured intelligence is 85 and is one year behind in reading would not be identified as reading disabled. The criterion for identification of reading disabled children used in the present study will be based solely on the number of years behind in reading with the assumption of intelligence being within the average range.

In setting up programs to remediate children whose reading development is lagging, we need to know specific information about their disabilities beyond the quantitative information that the above definition may give. Knowledge is needed regarding the qualitative differences between disabled and normal readers. Disabled readers may attack the reading process like younger children who
read at the same level or like children of their own chronological age.

A tool that can provide an understanding of the reading process is the analysis of miscues made when reading orally. A miscue may indicate some of the cues in the stimulus to which the child is reacting. The term "miscue" seems more appropriate than "error" in this study. Error connotes a mistake which is bad and should be eradicated whereas the response is an overt behavior which may unlock aspects of intellectual processing (Y. Goodman, 1970). A reader may be testing a hypothesis as to what the printed word is or if it makes sense in relation to the rest of the sentence, paragraph or passage.

In the past, analysis of miscues was predominately quantitative. The number of errors was utilized in determining placement in reading material. There is a danger in limiting analysis to only quantity. Perhaps every miscue should not carry equal weight. Support for this statement is illustrated in the following example of two children reading the sentence, "The boy sits on the chair and waits for his mother."

Child one: The boy is sitting on a chair waiting for his mother.

Child two: The (hesitation) boy s-s-s (examiner must give the word "sits") on the (hesitation) champ and water
for his mother.

The first child read fluently and with meaning. The words substituted and inserted did little to change sentence meaning. He made five scoreable errors.

1) Insertion of "is"
2) Substituting "sitting" for "sits"
3) Substituting "a" for "the"
4) Omission of "and"
5) Substituting "waiting" for "waits"

The second child read in a word-by-word manner, required examiner assistance and gained little meaning from the sentence. He had three scoreable errors.

1) Assistance for "sits"
2) Substituting "champ" for "chair"
3) Substituting "water" for "waits"

Even though the second child gained meaning markedly different from the intended sentence meaning, he did better quantitatively according to conventional Informal Reading Inventory scoring procedure (Pikulski, 1974). Unless attention is given to the degree of change in meaning created by a miscue, it is possible to overlook those in great need of remediation and misplace those who do read with understanding.

The use of qualitative analysis of miscues can yield a great deal of information about what children do when
they read as well as their strengths and weaknesses. In qualitative analysis, each miscue is evaluated in relation to the expected response. The miscue may or may not be graphically similar, syntactically and semantically appropriate in context and corrected or uncorrected by the reader. If the sentence "The elephant will pick up the logs with his trunk" was read "The elephant will pack up the logs with his long nose", the following associations between the errors and printed words exist. "Pack" and "pick" are graphically similar except for the medial vowel. The two words are both verbs so there is syntactic appropriateness. The meaning of the sentence is changed with the substitution of "pack". "Trunk" and "long nose" are graphically dissimilar, but the meaning is identical in each sentence. Both words are nouns so syntactic appropriateness exists.

The purpose of this study is to qualitatively analyze oral reading miscues in order to ascertain if seventh graders whose instructional reading level is 4th grade process like fourth graders reading at 4th grade instructional level or like their seventh grade peers whose instructional reading level is 7th grade.
Chapter II

Review of Literature

The following is a chronological review of the literature in the area of miscue analysis in oral reading. All the studies included were developmental in nature. Some studies also compared the errors made by normal and retarded readers.

Miscue research can be divided into two phases, each with a different emphasis. Phase one may be characterized by the counting of oral reading errors and classifying them according to type to differentiate disabled readers from normal readers. Errors were largely viewed as signs of imperfect learning. Some researchers were beginning to write that more attention should be paid to errors that affect the meaning of the material read. In phase two, analysis became qualitative and was directed at examining how errors were related graphically, semantically and syntactically to the printed material. Errors were viewed more as clues to understanding how readers attacked the reading process.

Phase 1: Quantitative Analysis of Oral Reading Miscues

Monroe (1928) compared the oral reading performances of disabled readers with that of normal readers to deter-
mine strengths and weaknesses of disabled readers with the purpose of then attempting corrective measures. Subjects were given the IOTA Word Test and the Gray Oral Reading Test from which all errors were tabulated and classified as follows:

1. Faulty vowels (eg. lift for left, mar for mare)
2. Faulty consonants (eg. sent for send)
3. Reversals
   a. Letter Orientation (eg. confusing p-d, b-d as in dig for big)
   b. Sequencing of words or letters (eg. saw for was, gary for gray)
4. Addition of sounds (eg. saying trap for tap)
5. Omission of sounds (eg. saying till for until)
6. Substitution of words (eg. was for lived)
7. Addition of words (eg. saying "Then the little boy began to cry" instead of "Then the boy began to cry")
8. Omission of words (eg. saying "Give me my tail again" for "Give me my long tail again")
9. Repetition - repeating words, phrases or whole sentences.
10. Refusal - saying "I don't know" or not attempting to read a word.
11. Words aided
Often more than one error was found in a word. For example, the word "crown" was sometimes read "grown" or "blond" as "blund". In each word there were errors in both consonant and vowel sounds. When multiple errors were found in a word, each error type was entered in one or more of the above categories. Thus, the categories were not mutually exclusive and more errors could be classified than words read by the subject. Two errors of the same type in the same word were counted only once. The total number of errors and the total number of errors of each type were tabulated for children in grades one through four.

The number of errors of each type made by disabled readers was compared to that of normal readers of the same grade level. Monroe used the following criteria to differentiate the readers:

1. Readers who made more errors than 75 percent of the normal readers were said to have reading difficulty.
2. Readers whose errors exceeded those errors of normal readers by 90 percent were determined to have severe difficulty.
3. If the errors made exceeded 95 percent of the number made by normal readers, those children were categorized as having extreme difficulty.
Three errors were found to differentiate normal from retarded readers independent of grade level. These three errors were reversals, repetitions and total errors. Other errors which differentiated normal and retarded readers were not constant for all four grades. In first grade, disabled readers made more faulty vowel and consonant errors, omission and addition of sound errors and needed more aid from the examiner than normal readers. At second grade, normal and disabled readers did not differ on the above errors. In third and fourth grade there was an increase in the number of omission of sound errors made by disabled as compared to normal readers.

Continuing the practice of counting and classifying errors was the research conducted by Cassie Spencer Payne (1930). Her study was an attempt to discover principles regarding the occurrence of oral reading errors that would be of diagnostic value. Payne was one of the first early researchers who did make reference to the quality of errors.

Four hundred urban children in grades two through five were given words and phrases to read orally through a tachistoscope. The material consisted of words assumed to be unfamiliar and of words assumed to be familiar to the children. Familiar words were taken mainly from the Gray Oral Reading Paragraphs. The words were exposed only once.
If a child did not know a word, he was to tell all the letters he could remember.

Types of errors as a function of reading ability were examined. There were no differences in the types of errors made by children of different reading levels. Payne randomly selected ten words from the Gray Oral Reading Paragraphs and the responses to these were classified according to the percentage of correct responses, reversals, omissions, substitutions and insertions. These ten words were selected to illustrate the types of errors made. The ten words were: (a) go, (b) cat, (c) saw, (d) once, (e) ping, (f) after, (g) go-by, (h) mouse's, (i) wanted, (j) beautiful, (k) palace and (l) gambit.

Results showed that the type of error made depended on the word used as a stimulus. For example, all but three of the incorrect responses to "palace" were omissions. "Place" was the most frequent substitution. The fact that "place" occurs much more often in written materials than "palace" illustrates the effect of frequency on word recognition (Foot and Havens, 1965).

Payne concluded with the need to consider the graphic similarity of the miscue and the word in print. When the child is confronted with an unknown word, he has a tendency to respond with the word in his sight vocabulary which is most like it in sound or appearance. A child with a limited sight vocabulary tended to give only a few letters of
a response instead of an entire word. The response began with the same initial letter as the printed word. When mature readers encountered unknown words, they often substituted a word that was consistent in meaning with the passage. Whether an omission, reversal, insertion or substitution was made, its occurrence was dependent upon the degree of graphic similarity between the word presented and other words being learned at the same time.

Madden and Pratt (1941) studied the oral reading errors of students (n=1154) in grades three through nine in the public schools in Shorewood, Wisconsin. The purpose of the study was to provide diagnostic analysis beyond which silent reading tests provide and to point out the mechanical factors responsible for the poor reading.

Errors were counted and a percent of each error type was given. Results showed that 50 percent or more of the errors in each grade were mispronunciations. The following are examples of what Madden and Pratt considered mispronunciations: (a) saying "crime" for "crimes", (b) saying "peace" for "pace" and (c) saying "religions" for "relations".

The smallest percent of errors was in reversals, .4 - 1 percent. The percent of refusal errors dropped decidedly after grade three. The author stated that this may have been due in part to the fact that by the end of
grade three, pupils tended to attack words either accurately or inaccurately. It was concluded that because of the high percent of mispronunciations that much of the informative material was too difficult for at least 20 percent of the pupils within each grade. Thus, the difficulty of the material might have had an effect on the type of error made.

The number of all types of errors except mispronunciations tended to be limited after grade three. A slight rise in the percent of errors in grade seven may have been due to the material difficulty at that level.

A qualitative analysis of omission and insertion errors was conducted. Results showed more articles were omitted or added than any other part of speech, with prepositions second. Articles and prepositions may affect the meaning of a selection only slightly. Madden and Pratt (1941) commented that substitutions of verbs, adjectives and nouns caused misinterpretation in a majority of cases. For example, the substitution of "partial" for "practical" and "impartial" for "impractical" in the sentence "Over their counters you can buy many (practical) (partial) and many, many more of the most (impractical) (impartial) things in the world."

The authors also expressed the view that any and every discrepancy from a text indicated a skill deficiency
requiring remedial attention. Though the authors did a qualitative analysis of omission and insertion errors, little attention was given to how the errors affect the meaning gained by the reader, cue strategies used or strengths and weaknesses of the reader.

A study by Bennett (1942) seems to be more a shift in the direction of qualitatively looking at oral reading miscues. Bennett acknowledged that the process of word discrimination was complex, especially for retarded readers. In studying the reading development of retarded readers in two grade levels, she reported several phenomena that could be related to the response style of certain children. Answers to the following questions were sought:

1. What parts of words are most frequently observed by children and are used as cues in word recognition?

2. Have pupils who are extremely weak in word discrimination formed habits of depending on trivial or non-characteristic details of words as cues for recognition?

3. Are substituted words similar in form, idea or unlike in form or idea?

Bennett analyzed 34,274 errors made by retarded readers in grades three and four. Fifteen-hundred words of the Gates Primary Word List were arranged in order of frequency of use and grouped into units of twenty words each.
The words in each unit were then incorporated into five or six short sentences. No word that had not been previously introduced to the children was used. Every pupil began at Unit 1 and proceeded at varying rates of progress to higher units.

Bennett reported the results of the analysis of the first thirty units. Seventy-five percent of the words used were monosyllables which may have explained why no nonsense words as errors were recorded. The results showed that errors which had one, two or more initial letters in common with the stimulus word, but had unlike endings (eg. cat - cup) comprised 31 percent of the total errors. Errors which had one or more letters at the end in common with the stimulus word but unlike beginnings (eg. have - love) made up 16 percent of the total. Median vowel errors were 15 percent of the total (eg. cup - cap). Reversals made up 12 percent of the total errors.

Almost half of the total errors were the beginning and ending letters of words. It could be concluded that the beginning and end of words are most frequently used as cues and the beginning will be the more dominant cue. Bennett stated from the results that failure to observe the middle section of words was an important factor in mispronunciation. Reversals of words (eg. saw/was, on/no) were more frequent than letter reversals (eg. b/d, p/g).
Certain changes occurred as students advanced in units. Reversals became less dominant, the final "s" errors became corrected and the students' perceptual span widened beyond that of using only single letters as a cue for an erroneous response.

The structure of the context in which the stimulus word was incorporated played a role in governing verbal responses. Bennett estimated that 41 percent of the error responses in context were closely associated "in thought" with the stimulus. Of the irrelevant responses, Bennett estimated that 50 percent were the same part of speech as the stimulus. Responses that were incorrect but closely associated in meaning were usually the same part of speech as the stimulus.

Bennett also found a uniformity among responses. A stimulus word called forth the same miscue on the part of many students. A possible reason may have been that they encountered these basic words frequently and tried to master them, but failed. Basic words which had any word part in common with the stimulus were easily confused.

In conclusion, Bennett stated miscues did not occur haphazardly, but were governed by context and faulty learning developed by the student. The most pronounced characteristic of these retarded readers found by Bennett was the tendency not to inhibit associated responses until
a word was clearly seen in all its parts (eg. saying "grass" for "green"). The children tended to make responses after processing only a part or parts of a word.

Ilg and Ames (1950) investigated the reading behavior of children beginning at age fifteen months and followed their progress through age nine. They were concerned with miscues made by the successful learner as he matures. Miscues were analyzed to reveal what sorts of available information the reader used or was learning to use.

The Gray Oral Checktest and the Gray Oral Reading Paragraphs were used to sample reading behavior. In both measures, errors were counted and categorized. Ilg and Ames were looking to see if errors occurred that would be characteristic responses of certain age levels. The characteristics might in turn give clues to the stage of a child's reading progress.

The findings were compiled into a reading gradient showing the stages children pass through in becoming mature readers. Ilg and Ames (1950) defined reading maturity as the ability to read sentences easily and recognize unfamiliar words accurately and rapidly. The reading gradient was used to identify the age trends that oral reading errors tended to follow.

Outstanding types of errors found at school ages are
as follows:

1. Age six: Having to be told words, reversing three letter words or repeating words.

2. When actually reading words (ages 5½ and 6) and sentences (age 7), the major error was substitution of visual form (eg. same/some, then/when).

3. Age eight: Substitutions of visual form and of meaning occurred equally as often.

4. Age nine: Substitutions of meaning (eg. room/house, a/the).

Reversal of letters occurred from age 5½ through age 7. Reversal of the order of words within sentences appeared at ages 7 through 9. Additions and omissions were found at all ages after 6 years, but were not outstanding error types. Having to be told words occurred most frequently at age 6 and then steadily decreased to age 9. By nine years children either guessed at unfamiliar words or omitted them entirely.

Ilg and Ames found a definite sequence of the kinds of words first recognized by children learning to read. They were sound words (eg. wow), names of signs (eg. hot, cold), familiar proper names, nouns (eg. dog, milk), articles (eg. a, the, an), conjunctions (eg. and, but), pronouns and short verbs (eg. as, can, go). The authors did not state if the words recognized were affected by
instruction.

In conclusion, Ilg and Ames stated that any child can or should be able to read when he had reached a definite stage on a reading gradient, regardless of chronological age or school placement. In determining a child's needs, one must look at the stage reached on a reading gradient. Miscues are the student's clues as to where he is functioning. Often miscues are ignored as unfortunate mistakes. A great deal can be learned from them. Many "errors" may be relatively common and short lived stages in the gradient. Ilg and Ames hold the view that to avoid reading disability, one must be patient and wait for the development to take its natural course. It could be questioned whether remediation would consist of leaving the child alone or working with him at the point where he is functioning to correct types of predominant miscues.

Schale (1966) made mention of the quality of errors, but looked at certain error types and the frequency of each type in the manner of research in phase one. She was one of few who extended miscue research to include more grade levels.

Schale (1966) conducted a study of elementary and secondary students to see if certain types of oral reading errors decreased, increased or persisted as a function of grade level. The 180 subjects came from one elementary
and one secondary school in the same district in Chicago. Students in the even-numbered grades, two through twelve, were given Form B of the Gray Oral Reading Test and the frequency of each error type was recorded. The following eight error types were examined: (a) no response, (b) inversion, (c) partial mispronunciation (d) gross mispronunciation (e) repetition, (f) omission, (g) insertion, (h) substitution.

The researcher did not provide examples of the preceding error types. Results showed that certain changes occurred in oral reading errors at the elementary and secondary levels. As grade level increased, partial and gross mispronunciation errors also increased, while no response and repetition errors decreased. Substitutions, omissions and insertions persisted throughout the grades. The difficulty of the passage affected whether repetition, omission, partial and gross mispronunciation errors were made, while substitution, insertion and no response errors were independent of the material difficulty.

Schale also observed that with the increase in chronological age came a reduction in the total number of miscues made. No difference in sex was found regarding the frequency of oral reading miscues. The reduction rate of the total miscues was found to be rapid during the primary grades and slower and irregular through the
secondary levels.

Schale recommended that attention be given to oral reading errors made at all grade levels and that maturational itself did not eliminate the difficulties that may lead to errors. Skills must be taught, re-taught or reinforced at all grade levels and the analysis of miscues can give insight into what skills need remediation.

Phase 2: Qualitative Analysis of Oral Reading Miscues

K. Goodman (1965) was very influential in directing attention toward the nature of miscues and their affect on the reading process. He holds the view that reading is the active reconstruction of a message from written language. All reading behavior is caused, being cued or miscued, during the child's interaction with written language. Goodman studied the reading behavior of a group of first, second and third grade children to see what systems were operating to cue or miscue the reader. The systems were cues within words (eg. letter-sound relationships), cues within the flow of language (eg. patterns of words), cues external to language and the reader (eg. pictures), cues within the reader (eg. conceptual background, reading attack skills).

The errors of one-hundred first, second and third graders were recorded while reading orally from a sequence
of stories and word lists accompanying each story. Materials from the series had not been previously used by the school.

The results showed that the children were able to read many stories in context which they could not read from lists. The number of words read in context increased in a greater proportion than words read in lists at each successive grade level. Goodman (1965) attributed the preceding statement to the observation that the children became increasingly proficient in using cue systems outside of words as they advanced in grade.

It was observed that children in successive grades used word attack skills with increased frequency though not necessarily with increased fluency. The rate of one-time substitution of words also increased in successive grades. Goodman suggested three possible causes of this observation: (a) an overuse of cues within words, (b) miscuing by book language which differs from language as the child knows it, and (c) ineffective use of language cues.

Goodman looked at regressions as attempts by readers to correct prior errors in reading and not really as errors in themselves. He observed that when the children read a word from a list incorrectly that unless it was corrected immediately, they seldom went back to correct it later. In contrast, the following behaviors were seen to occur
when the children read a story:

If the child made an error which he realized was inconsistent with prior cues, he re-evaluated the cues and corrected the error before continuing. Otherwise, he read on encountering more cues which seemed inconsistent with his error(s). Eventually, he became aware of the inconsistencies and tried to find the source of them. In some instances, the errors were not corrected. This occurred if the error made no difference to the meaning of the passage or if the reader relied so heavily on cues within the words that he lost what meaning the words conveyed.

The following are the five points Goodman made regarding the use of oral reading miscues based on his observations:

1. Introducing new words out of context before new stories were read did not appear necessary or desirable.

2. Prompting or correcting children appeared unnecessary since the nature of language offered cues to the children whether the meaning or syntax was faulty or not.

3. Regressions were seen as means by which children corrected themselves and learned.

4. The teaching of one approach such as phonics, seemed highly questionable since the study showed that the reading difficulties encountered by many of the children were caused by the overuse of certain strategies as much as the lack of use of the strategies.
5. The need was found to exist for a reading theory and methodology that focused on language. Goodman observed that it was more difficult for children to recognize words in isolation than to read them in context. Reading skills should then be taught and reinforced within context.

Clay (1968) studied the graphic similarity between miscues and the printed material for the purpose of exploring the influence of linguistic structure on children's word choices when reading orally.

One hundred five-year-olds in New Zealand were observed on a weekly basis for one year. Errors were recorded when the children read orally from a standard series of reading books and then analyzed for syntactic appropriateness.

The results showed that 72 percent of the substitution errors made occurred in equivalent morpheme-class or morpheme-sequence structure. Clay's criterion for equivalent morpheme-classes or sequences was position. Two morphemes or morpheme-sequences were equivalent if they could be substituted for each other in the sentence. When one error was made in a response, the text stimulus and the word substituted belonged to an equivalent morpheme-class 77 percent of the time. Sequence of substitution errors were equivalent linguistically 58 percent of the time. Clay
explained the difference in percent between single word and sequence of word errors by saying that a young child's knowledge of the linguistic constraints operating on word sequences may not be as refined as those constraints operating on single words.

Clay concluded that children entering school have a grammatical knowledge of their language. When a young reader guesses at times of uncertainty, the guesses tended to be dominated by the syntax of his language.

A great deal of information about a child's processing can be gained from examining his self-correction behavior of reading miscues. Not all errors may seem to be mistakes to the reader if meaning is gained. Clay (1969) studied the self-correction behavior of 100 students in their first year of school for the purpose of better understanding how and why readers correct or do not correct oral reading miscues.

The students were divided into four reading groups: (a) high (H), (b) high-middle (HM), (c) low-middle (LM) and (d) low (L). The groups were determined by dividing end of the year reading progress scores into four quartiles. The children read once a week from a basic reading series and every response was categorized as true report, error repetition or self-correction. From the observations by the investigator and the record of res-
responses, it was shown that when a child was aware that "something was wrong", he often went back over a line or tried several responses with the result that the error was frequently corrected.

Results showed a significant difference in correction behavior among the four groups. The H and HM groups corrected one in every three or four errors. The LM group corrected one in eight errors and the L group corrected one in every twenty errors. The following was the self-correction rate of substitution errors: (a) H-35 percent, (b) HM-28 percent, (c) LM-14 percent and (d) L-11 percent.

The beginning readers substituted words which were grammatically similar to text words in 72 percent of the total substitution errors. Error responses that were similar according to letter-sound relationships accounted for 43 percent of the errors. Clay stated that grammatical competence could be a significant source of cues for error-correction strategies. Substitution of verbs agreed with the text in both number and tense in 55 percent of the errors. Clay implied that the rest of the context may influence a student's choice of words and that he is aware that verbs agree with other words in context (eg. saying "The man is leaving" for "The man is exiting").

In the preceding example, the verbs were alike in number and tense. Both verbs were in the present tense
and both were singular, agreeing with the singular noun, man.

Pronouns had a self-correction rate of 60 percent, while nouns had only a 20 percent self-correction rate. The author observed that the children appeared to recognize the fact that pronouns also have to agree with some referent near by. The results supported a view that children were able to respond to dissonance or consonance in the grammatical and semantic aspects of their language.

Clay stated that the low error, high self-correction rate of the H group might have been the result of efficient processing of language cues. The HM group, having a lower self-correction rate, seemed to be observing cues and resolving inconsistencies but the process was not too efficient. The self-correction rates of the LM group also showed attempts to process cues, but there was little positive reinforcement because so many errors were made. The L group was characterized as being very low in effort to correct errors. The difficulty of the material was not controlled so it seemed that self-correction behavior was dependent upon the child's ability to handle the material difficulty. Clay recommended that books should provide for a low proportion of error for the reader. High error rates might cause more confusion for the child and less opportunity to gain insight into the reading
Clay concluded that information processing would be given greatest scope if the teaching of reading included the following:

1. The child's spontaneous speech be directed easily to the reading task.

2. Flexible and varied word-solving techniques were stressed.

3. Children were encouraged to work at their errors to note continuity of meaning and see if errors were graphically and grammatically similar to the text material.

Goodman (1970) studied the miscues of six children who were followed from their sixth month of reading to the end of their fourth year of school for the purpose of applying miscue analysis to teaching strategies. Twenty oral reading performances of each child were recorded and a total of 2500 miscues were analyzed.

From the results of the study, Goodman observed the following:

As readers became more proficient, some reading errors were better than others. Omissions became qualitatively better.

One subject omitted words he did not know and could or would not try to figure out during early oral readings. This was evident because he often paused at these words, looked at the illustration on the page, looked at the word longer and then went on.
In one story early in the research this subject omitted "fair, going, buy, stay, late".... In a story six months later, the same subject omitted two words only, "a" and "just". The sentences resulting from the omissions were meaningful language units. (Goodman, 1970, pg. 456)

Substitutions showed a finer discrimination of sound-symbol relationships (eg. errors made early in the research were "make" for "monkey", but later more errors like "man" for "men" were made).

Less proficient readers tended to produce miscues which were responses to the graphic field or to a habit strength association (eg. a reader said "Have a Jimmy" for "What a jump". "Have" for "what" was read throughout two stories. More proficient readers produced more complex miscues, involved more integration of meaning, grammatical and sound systems of the language with graphic input, experience and background (eg. reader said "spot of fur over her nose" for "spot of fur above her nose").

As a result of the data gathered, Goodman advised against introducing new words out of the context of language. Context can change grammatical function, the syntactic relation to other words, meaning, pronunciation and intonation. She also recommended that teachers concentrate on the concept of words rather than on dictionary definitions. It might be easier for children to get meaning from the context of a story if they learn the underlying con-
cepts that words represent. Teachers might also help students make use of their miscues. Children could learn to ask themselves questions while reading such as does it sound like language? Does it make sense, if not why? The teacher can ask herself what she can do to help the child besides telling him a word and forgetting about it. By asking what is involved in the learning and reading process which caused a child to read orally as he did, the teacher can better aid the child in developing strategies to meet future reading situations meaningfully.

Weber (1970) conducted research to determine to what extent errors were similar to printed material and to suggest strategies that beginning readers used to identify words. Approximations to the correct response were analyzed in terms of letters, word structure, grammatical and semantic acceptability. Twenty-one children, 10 boys and 11 girls, with a mean age of 6.3 were studied. They were divided into two groups. Twelve were in the high or faster-moving group and nine were in the low or slower-moving group. The errors of the weaker readers were compared to those of the stronger readers to determine if any differences existed between the two groups when reading the same material. Errors made late in the year were compared to earlier errors in order to determine if refinements or shifts in strategies occurred with greater reading maturity.
The Scott Foresman New Primers and New Basic Readers were the materials used. Errors were classified, using the whole word as the basic unit. Errors were substitutions, omissions, insertions and reversals. Analysis concentrated on errors as they reflected failure to recognize the correspondence between letter and sound patterns or to use grammatical or semantic context.

Weber found that other factors also influenced some error responses. For example, children in both groups drew a large majority of their error responses from the list of words they had already met in their books. Confusion often resulted between words that were presented in the same lesson or were somehow closely related. The style of sentences was also an influence. Children showed by their errors that they expected certain sentence types.

The results of the error analysis showed that substitutions of one word for another comprised 80 percent of the total errors. The remaining errors were divided almost equally between omissions and insertions. Reversals were rare for both groups. Both groups of readers made the same types of errors.

In terms of graphic similarity of letters, better readers approached correct responses more closely than did slower readers at the beginning and end of the year. Beginning letters was the cue source used most often by
first graders, followed by final letters. Many of the errors shared the same stem morpheme with the written word (eg. saying "seat" for "sea").

Errors were analyzed at the syntactic level to determine the influence of grammatical structure in shaping responses. Ninety-one percent of the errors were found to be grammatically appropriate to the preceding context. There was little difference between groups regarding syntactic appropriateness. Both strong and weak readers used constraints of the preceding grammatical context to reduce the range of responses available. Two thirds of the errors conformed to the grammatical structure of the entire sentence.

Many of the substitution errors that were appropriate to the preceding grammatical context were also graphically similar to the written word (eg. saying "that" for "what" in the sentence "Puff did not say what she wanted").

In substitution errors, the most frequent response to a given word was the same part of speech - 63.9 percent. Those that differed were largely found to be grammatical with the context.

Of the 594 errors judged for semantic appropriateness, 92.8 percent were consistent with the meaning of the rest of the sentence. Two-thirds of the 693 errors analyzed for semantic appropriateness to the passage were found to con-
form to the preceding story context.

The results showed that in the stages of reading, children expected the sentences that they read to conform to the structure of the language they already knew and that they actively used this knowledge while reading.

Biemiller (1970) studied miscues in an effort to trace the development of the use of graphic and contextual information when learning to read. Errors were analyzed in terms of contextual constraints (making sense) and graphic constraints (graphic approximation of the error response and the printed word). Non-response errors were also studied.

After studying the oral reading errors of 42 children in two first grade classes for a school year, Biemiller identified three stages of reading development. The first, designated pre-NR, was characterized by a predominant use of contextual information (information the reader brought to the situation and information he has just read). The second stage, NR, was characterized by a predominance of non-response errors and a significant increase of graphically constrained errors. The third stage, post NR, was characterized by an increase in the co-occurrence of graphic and contextual constraints. There was also a reduction in the frequency of non-response errors in the last stage.

Biemiller found that the earlier a child moved into
the NR stage, the better his reading performance was at the end of the year. However, the length of time spent in the NR phase was not related to reading performance. In the NR stage, the child may have now grasped the notion that one specific word is associated with each graphic pattern. With increased mastery of graphic skills, the child can turn attention toward following the content and structure of the passage. He can also combine graphic information with syntactic and semantic constraints to identify words easily and rapidly.

Evidence exists that in higher grades, it is retarded readers who make errors indicative of over-use or mis-use of graphic information. According to Biemiller, two factors may be operating. One is that some readers stay stuck on the use of strategies emphasizing contextual information at the expense of graphic information, longer than necessary. By later years they may be trying to master graphic skills but within a framework of failure and dissatisfaction with reading. Second, it may be more difficult for poor readers to master the use of graphic information; the reason not being clear.

Summary

Miscue research has progressed from counting and classifying errors to the analysis of why errors affect
the way children attack the reading process. The preceding studies examined readers at various ages, grades and levels of proficiency.

Ilg and Ames (1950) and Schale (1966) were the major studies looking at reading development over many grade levels to determine what changes occurred in error behavior as readers mature. Ilg and Ames observed that visual form errors gave way to errors affecting meaning as elementary school children grew older. Schale extended miscue research to include elementary and secondary students. She found that as chronological age increased, mispronunciation errors increased and the total number of errors decreased. Errors were also dependent on readability level. Schale stated that maturation itself did not eliminate reading difficulties and skills should be reinforced at all grade levels.

Qualitative research began with Goodman (1965). Clay (1968), Weber (1970), Y. Goodman (1970) and Biemiller (1970) also examined the relationship between miscues and the text. Their research found that context had a definite affect on the reader's choice of words, children actively used grammatical knowledge when interacting with language and that errors changed as a reader became more proficient. Among proficient readers was observed increased self-correction behavior, errors adhering closely to the intended
text meaning and a co-occurrence of graphic and contextual cues used by readers.

Qualitative analysis has not previously been done on the reading behavior of older children. It is important to consider qualitative analysis because there are students at all grade levels who experience reading difficulty and such analysis may help to better understand how older disabled readers process printed material.

This study utilized a qualitative analysis of oral reading miscues to assess whether seventh grade children reading on a fourth grade level attack the reading process like a fourth grader reading on the fourth grade level or like their seventh grade peers.
Chapter III

Method

Subjects

A group of seventh graders behind in reading as determined by test scores, classroom observations and teacher recommendations were given the Standard Reading Inventory (SRI) Word Lists, Form B (McCracken, 1966). Ten students whose instructional reading was fourth grade were chosen as subjects. An equal number of fourth graders with a fourth grade instructional level and seventh graders with a seventh grade instructional level were selected by the same procedure. The criteria for determining instructional reading level was an accuracy score between 70 percent and 90 percent when recognizing words in isolation (McCracken, 1966). "...pronouncing words presented in isolation is the most sensitive single subtest of the SRI for determining instructional level..." (McCracken & Mullen, 1970, p. 109).

Procedure

Students reading at the fourth grade level read the same 332-word story of fourth grade readability and students reading at the seventh grade level read the same 339-word story of seventh grade readability according to A Formula For Predicting Readability (Dale-Chall, 1948).
As each student read orally, an examiner marked the errors made and each reading was taped so another examiner, with no prior knowledge of the students, could classify the miscues at a later time.

The Scoring Procedure

The two judges scored the samples independent of each other. Each reading selection was viewed as a test, with each word considered a test item. Any response or lack of response which did not constitute a word-for-word reproduction of the printed message in its spoken form was counted as an error. Errors were counted at the word, rather than at the letter or phrase level except for changes in word order, omissions and insertions. These were counted as one error even though they might have involved more than one word. The types of errors scored were:

1. ORD -- word order changes (eg. put the tent up/put up the tent)
2. REV -- substitution of a word containing the same letters as the text word but in a different sequence (eg. barn/bran)
3. STEM -- substitution of a word containing the same stem as the text word (eg. walking/walked)
4. AFFIX -- substitution of a word containing the same affix as the text word (eg. unkind/unkempt, hopped/
jumped)

5. SUB -- substitution of a meaningful word for a text word if it cannot be categorized as REV, STEM or AFFIX

6. NON -- substitution of part of a word or a nonsense word (e.g. pra-/pride, stampled/stumbled)

7. INSERT -- an insertion of one or more words between two text words

8. OMIT -- an apparently inadvertant omission of one or more text words

9. SKIP -- a word omitted with an indication that it is unknown

Use of graphic cues was inferred by noting the graphic similarity of the errors to the text. STEM, AFFIX, SUB and NONSENSE errors were scored as graphically similar (SIMILAR) to the text or different from the text (DIFFERENT), using the following criteria:

1. 2 points: the error and text word began with the same letter

2. 1 point: the error and text word ended with the same letter

3. 1 point: the first letter of the error was the same as the last letter of the text word

4. 1 point: each letter shared by the error and text word
5. 1 point: each shared pair of letters (eg. horn/torn = 2 shared pairs of letters)

6. 1 point: look alike rhymes (eg. torn/horn - yes, rain/reign = no)

The points were totaled and divided by the number of letters in the text word and in the error. If the result was .50+, it was similar and less than .50 was considered different. REV and ORDER errors were always scored as SIMILAR since all the letters or text words were included in the error except in a different sequence. INSERT, OMIT and SKIP errors were always scored as DIFFERENT.

The reader's apparent use of contextual cues was inferred by noting whether the errors were syntactically and semantically appropriate to the context. The judge read a sentence as the student read it up to and including the error (or one word past the error if it was an INSERT, SKIP or OMIT). If the sequence of words could not have occurred as the beginning of a sensible sentence, the error was scored as not contextually appropriate (NOT-CONTEXT). If the sequence could have begun a sensible sentence, the entire sentence was read as the subject read it up to and including the error, but continuing on with the remainder of the sentence as it appeared in the text. If the error was appropriate, considering only the
preceding context, it was scored as PRE-CONTEXT. If the error was contextually appropriate in the whole sentence, but the meaning differed from the intended text meaning, the error was scored as SEN-CONTEXT. If the meaning was equivalent to the meaning of the related sentence, the error was scored as contextually appropriate to the passage as a whole (PASS-CONTEXT).

Each error was scored as CORRECTED or NOT CORRECTED, depending on whether the student read the text word (or words) correctly after committing an error. All the uncorrected NOT-, PRE- and SEN-CONTEXT errors were considered to represent some meaning loss. The total number of these errors was expressed as a proportion of a number of words in the passage and referred to as a MEANING LOSS score.

Scores which were derived from the coding of errors are: (a) the numbers of errors of each type, (b) SIMILAR errors, (c) CORRECTED errors, (d) errors at each of the levels of contextual appropriateness, (e) the numbers of corrected errors in each of the categories of graphic similarity and contextual appropriateness, (f) the number of errors representing MEANING LOSS and (g) the number of repeated words.

Because the children did not make the same number of errors, the proportions of errors of different types,
errors in the categories of graphic similarity and contextual appropriateness and the corrected errors within each category of graphic similarity and contextual appropriateness were computed (PROPORTIONS) for each subject.
Chapter IV

Results

Table 1 presents the mean proportions and standard deviations of each error type for the three groups of subjects. The three groups were identified in the tables as group I: disabled seventh grade readers, group II: average fourth grade readers and group III: average seventh grade readers. T-tests were done for the two groups whose instructional reading level was fourth grade, but could not be done for the group of seventh graders whose instructional level was seventh grade because this group did not read the same selection as the other two groups. When significant differences and marked similarities between groups I and II were found, this author also looked at the performances of the average seventh graders. One should be cautioned that the comparisons and observations made between the two groups reading at fourth grade level and the group reading at seventh grade level were not based on statistical analysis, but were of definite interest in trying to understand how disabled seventh grade readers process printed material.

Significant differences were found between groups I and II in the categories of word order, omission and nonsense miscues. Group I (7th grade disabled readers) made
Table 1
Mean proportions and standard deviations of each error type

<table>
<thead>
<tr>
<th></th>
<th>word order</th>
<th>reversal</th>
<th>substitution</th>
<th>nonsense</th>
<th>part</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>s.d.</td>
<td>mean</td>
<td>s.d.</td>
<td>mean</td>
</tr>
<tr>
<td>Group I</td>
<td>0.045</td>
<td>0.038</td>
<td>0.014</td>
<td>0.034</td>
<td>0.649</td>
</tr>
<tr>
<td>(Disabled 7th</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade Readers)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group II</td>
<td>0.010</td>
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<td>0.000</td>
<td>0.000</td>
<td>0.661</td>
</tr>
<tr>
<td>(Average 4th</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade Readers)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group III</td>
<td>0.003</td>
<td>0.009</td>
<td>0.037</td>
<td>0.040</td>
<td>0.372</td>
</tr>
<tr>
<td>(Average 7th</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade Readers)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</table>
Table 1
(continued)

Mean proportions and standard deviations of each error type

<table>
<thead>
<tr>
<th></th>
<th>insertion</th>
<th>omission</th>
<th>skip</th>
<th>stem</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean  s.d.</td>
<td>mean  s.d.</td>
<td>mean  s.d.</td>
<td>mean  s.d.</td>
</tr>
<tr>
<td>Group I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Disabled 7th Grade Readers)</td>
<td>0.087</td>
<td>0.050</td>
<td>0.087</td>
<td>0.052</td>
</tr>
<tr>
<td>Group II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Average 4th Grade Readers)</td>
<td>0.074</td>
<td>0.054</td>
<td>0.043</td>
<td>0.034</td>
</tr>
<tr>
<td>Group III</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Average 7th Grade Readers)</td>
<td>0.095</td>
<td>0.087</td>
<td>0.191</td>
<td>0.110</td>
</tr>
</tbody>
</table>

Significant differences were found between groups I and II in the miscue categories of word order, omission and nonsense. Group I made more word order miscues ($t = 2.58$ and $p < .019$) and more omission miscues ($t = 2.21$ and $p < .040$). Group II made more nonsense type miscues than group I ($t = 3.18$ and $p < .005$).
more word order and omission miscues than group II (4th grade normal readers). The \( t \)-value and significance level for word order and miscues was \( t = 2.58 \) and \( p < .019 \) and for omission miscues \( t = 2.21 \) and \( p < .040 \). But group II made more nonsense type errors. The \( t \)-value and significance level for nonsense miscues was \( t = -3.18 \) and \( p < .055 \).

Group III (average 7th grade readers) appears to have made fewer word order errors than the other two groups, but made many more omission miscues than the other groups.

Marked similarities occurred between groups I and II in the categories of substitution and insertion errors. However, group III made fewer substitution miscues and about the same proportion of insertion miscues.

Table 2 presents the mean proportions and standard deviations of similar errors, total errors corrected and errors affecting meaning. It was necessary to reduce the alpha level by 4 from \( \alpha = .05 \) to \( \alpha = .02 \) in the categories of NOT, PRE, SEN and PASS-CONTEXT because the scores in these categories were interdependent. If a miscue was labeled as belonging to one category, it in turn affected how other miscues were labeled. Therefore, the four categories were ipsative. In only one category was there a significant difference between group I and group II.

Group II made more miscues that were not contextually
Table 2

Mean proportions and standard deviations of similar errors, total errors corrected and errors affecting meaning

<table>
<thead>
<tr>
<th></th>
<th>similar errors</th>
<th>corrected errors</th>
<th>not-context</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>s.d.</td>
<td>mean</td>
</tr>
<tr>
<td>Group I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Disabled 7th Grade Readers)</td>
<td>.209</td>
<td>.093</td>
<td>.637</td>
</tr>
<tr>
<td>Group II</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Average 4th Grade Readers)</td>
<td>.312</td>
<td>.213</td>
<td>.657</td>
</tr>
<tr>
<td>Group III</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Average 7th Grade Readers)</td>
<td>.300</td>
<td>.130</td>
<td>.536</td>
</tr>
</tbody>
</table>
Table 2 (continued)

Mean proportions and standard deviations of similar errors, total errors corrected and errors affecting meaning

<table>
<thead>
<tr>
<th></th>
<th>pre-context</th>
<th>sen-context</th>
<th>whole-context</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>s.d.</td>
<td>mean</td>
</tr>
<tr>
<td><strong>Group I</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Disabled 7th Grade Readers)</td>
<td>.304</td>
<td>.062</td>
<td>.185</td>
</tr>
<tr>
<td><strong>Group II</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Average 4th Grade Readers)</td>
<td>.288</td>
<td>.057</td>
<td>.121</td>
</tr>
<tr>
<td><strong>Group III</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Average 7th Grade Readers)</td>
<td>.363</td>
<td>.085</td>
<td>.136</td>
</tr>
</tbody>
</table>

A significant difference was found between groups I and II in the category of NOT-CONTEXT. Group II made more miscues that were not contextually appropriate than group I (\( t = -3.23 \) and \( p < .005 \)).
appropriate to the selection \( t = -3.23 \) and \( p < .005 \). Group III made more miscues that were not contextually appropriate than both groups I and II. Groups I and II made a similar proportion of PASS-CONTEXT miscues while group III made many fewer miscues in this category than the other two groups.

The mean proportions and standard deviations of corrected errors within the various miscue categories and the percent accuracy of the total errors and of errors affecting meaning (any error not classified as PASS) are given in Table 3. The category of the proportion of corrected SEN-CONTEXT type errors was not included here or in the reliability table because one judge did not score this error type for some subjects while the other judge did.

Significant differences were found in the categories of total errors and errors affecting meaning loss. Group I made more total errors and more errors resulting in meaning loss than group II. The \( t \)-value and significance level for total errors was \( t = 2.86 \) and \( p < .010 \) and for meaning loss miscues \( t = 3.32 \) and \( p < .044 \). Subjects in group III made fewer corrections of PASS-CONTEXT errors and errors affecting meaning loss than subjects in groups I and II, but they made more corrections of not context-
Table 3

Mean proportions and standard deviations of corrected errors within various miscue categories and the percent accuracy of total errors and of errors affecting meaning loss

<table>
<thead>
<tr>
<th></th>
<th>corrected similar errors</th>
<th>corrected different errors</th>
<th>corrected not-context</th>
<th>corrected pre-context</th>
<th>corrected whole-context</th>
</tr>
</thead>
<tbody>
<tr>
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<td>s.d.</td>
<td>mean</td>
<td>s.d.</td>
<td>mean</td>
</tr>
<tr>
<td>Group I (Disabled 7th Grade Readers)</td>
<td>.608</td>
<td>.166</td>
<td>.646</td>
<td>.106</td>
<td>.656</td>
</tr>
<tr>
<td>Group II (Average 4th Grade Readers)</td>
<td>.521</td>
<td>.233</td>
<td>.741</td>
<td>.152</td>
<td>.738</td>
</tr>
<tr>
<td>Group III (Average 7th Grade Readers)</td>
<td>.629</td>
<td>.231</td>
<td>.510</td>
<td>.144</td>
<td>.827</td>
</tr>
</tbody>
</table>
Table 3
(continued)

Mean proportions and standard deviations of corrected errors within various miscue categories and the percent accuracy of total errors and of errors affecting meaning loss

<table>
<thead>
<tr>
<th></th>
<th>corrected</th>
<th>corrected</th>
<th>% accuracy</th>
<th>% accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>sen+whole</td>
<td>for</td>
<td>for</td>
<td>for</td>
</tr>
<tr>
<td></td>
<td>mean</td>
<td>meaning</td>
<td>total errors</td>
<td>meaning loss</td>
</tr>
<tr>
<td></td>
<td>s.d.</td>
<td>loss</td>
<td></td>
<td>loss</td>
</tr>
<tr>
<td>Group I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Disabled 7th Grade Readers)</td>
<td>.522</td>
<td>.689</td>
<td>.10</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td>.092</td>
<td>.136</td>
<td>.03</td>
<td>.01</td>
</tr>
<tr>
<td>Group II</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Average 4th Grade Readers)</td>
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<td>.690</td>
<td>.06</td>
<td>.03</td>
</tr>
<tr>
<td></td>
<td>.117</td>
<td>.221</td>
<td>.02</td>
<td>.01</td>
</tr>
<tr>
<td>Group III</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Average 7th Grade Readers)</td>
<td>.304</td>
<td>.163</td>
<td>.04</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>.109</td>
<td>.102</td>
<td>.01</td>
<td>.01</td>
</tr>
</tbody>
</table>

Significant differences were found between groups I and II in the categories of total errors and errors affecting meaning loss. Group I made more total errors ($t = 2.86$ and $p < .010$) and more errors affecting meaning loss ($t = 3.32$ and $p < .044$) than group II.
ually appropriate miscues. Group III also made fewer total errors and fewer errors resulting in meaning loss than groups I and II.

The reliability of the two judges for each error category is presented in Table 4. Only the two groups reading at a fourth grade instructional level were included in this table because the subjects in these groups read the same selection whereas the average seventh grade group read a different selection. The reliability estimate was an alpha reliability based on an analysis of variance. The formula (Cronbach, 1970) used was:

$$r = \frac{\text{mean squared error between groups}}{\text{mean squared error within groups}}$$

Very high reliabilities were found in the categories of the total errors, meaning loss, word order, reversal, nonsense, omission, skip and similar miscues. Lower reliabilities were found for the proportions of insertions, total corrected errors, whole-context, corrected different and corrected SEN + WHOLE miscues. Very low reliabilities occurred for the proportions of part errors, NOT, PRE and SEN-CONTEXT miscues and in the corrected error categories of similar, NOT, PRE, WHOLE
Table 4

- Reliabilities of the two judges for the proportions of all error categories.

<table>
<thead>
<tr>
<th>Error Category</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>total errors</td>
<td>.98</td>
</tr>
<tr>
<td>meaning loss</td>
<td>.93</td>
</tr>
<tr>
<td>word order</td>
<td>.95</td>
</tr>
<tr>
<td>reversal</td>
<td>.999</td>
</tr>
<tr>
<td>substitution</td>
<td>.82</td>
</tr>
<tr>
<td>nonsense</td>
<td>.89</td>
</tr>
<tr>
<td>part</td>
<td>-.33</td>
</tr>
<tr>
<td>insertion</td>
<td>.77</td>
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<tr>
<td>omission</td>
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<td>skip</td>
<td>.90</td>
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<tr>
<td>stem</td>
<td>.50</td>
</tr>
<tr>
<td>similar errors</td>
<td>.93</td>
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<tr>
<td>corrected errors</td>
<td>.80</td>
</tr>
</tbody>
</table>
Table 4  
(continued)  
Reliabilities of the two judges for the proportions of all error categories.

<table>
<thead>
<tr>
<th>Description</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>not-context</td>
<td>.33</td>
</tr>
<tr>
<td>pre-context</td>
<td>.36</td>
</tr>
<tr>
<td>sen-context</td>
<td>.61</td>
</tr>
<tr>
<td>whole-context</td>
<td>.77</td>
</tr>
<tr>
<td>corrected similar errors</td>
<td>.25</td>
</tr>
<tr>
<td>corrected different errors</td>
<td>.73</td>
</tr>
<tr>
<td>corrected not-context</td>
<td>.56</td>
</tr>
<tr>
<td>corrected pre-context</td>
<td>.48</td>
</tr>
<tr>
<td>corrected whole-context</td>
<td>-.03</td>
</tr>
<tr>
<td>corrected sen + whole</td>
<td>.84</td>
</tr>
<tr>
<td>corrected meaning loss</td>
<td>.27</td>
</tr>
</tbody>
</table>
and meaning loss.

Because the reliability of the total proportion of corrected miscues was not particularly high (.80), the separate corrected miscue categories could not be any higher than the total. This may in part explain the low reliabilities of the individual corrected error categories. In the miscue category of Part, the mean proportions of errors recorded by each judge were less than .050. The sparseness of miscues may help to explain the low reliability of -.33.
Chapter V
Discussion

The present study was designed to investigate whether seventh grade children reading on a fourth grade level attack the reading process like a fourth grader reading on the fourth grade level or like their seventh grade peers. A qualitative analysis of oral reading miscues of the three groups was used as the research methodology.

The criteria used for the selection of subjects within each group was their instructional reading level as defined from administering the Standard Reading Inventory Word Lists, Form B (McCracken, 1966). However, significant differences in Total Errors occurred between the disabled seventh grade readers and the average fourth grade readers who had the same instructional reading level. Perhaps the use of sight vocabulary as a predictor of instructional level is not a valid measure for poor readers. The criteria for instructional level as determined by McCracken (1966), is a total word recognition accuracy score between 90 percent and 94 percent. The average fourth grade readers had a 94 percent accuracy of total errors while the poor seventh grade readers had a 90 percent accuracy of total errors. Even though these percentages fall within the instructional range, they are at either extreme. Perhaps for other children, the use
of word recognition in isolation to determine instruc-
tional level may result in misplacement.

The following discussion will focus on miscue differences between the groups. The average fourth grade readers, possibly due to a lack of experiential background, made a greater proportion of nonsense miscues and this resulted in miscues that were judged as not contextually appropriate. This occurs because once a miscue is judged as being a nonsense word, it is always scored as not contextually appropriate. But this group still made a fewer proportion of miscues that resulted in meaning loss.

As mentioned previously, seventh grade disabled readers made more Total Errors than the fourth grade average readers. Furthermore, the disabled readers made more miscues which resulted in meaning loss than the fourth grade normal readers. It appears as if the proportion of miscues which change meaning increases as the proportion of total miscues increases. With the exception of the above differences between disabled readers and fourth grade normal readers, the seventh graders of fourth grade instructional level seemed to process printed material more like average fourth grade readers than like average seventh grade readers. The average seventh graders made fewer proportions of total miscues and fewer propor-
tions of miscues in categories affecting meaning. Schale (1966) observed in her developmental study of the changes in oral reading errors at the elementary and secondary levels that a reduction in total reading errors accompanies an increase in chronological age. Schale randomly selected her subjects, and one cannot make such a generalization without first determining the subjects' instructional level and difficulty of passages. Any further comparisons between this study and Schale (1966) could not be made because Schale did not define her error categories.

The average seventh graders also made more corrections when their miscues significantly changed meaning and did not correct as much when the miscue did not change meaning. The disabled seventh grade readers and average fourth grade readers made more corrections of miscues which were contextually appropriate at the passage level; the self-correction was not necessary to gain meaning. Both the average fourth grade and disabled seventh grade readers, but especially the disabled seventh graders, seemed to be paying more attention to graphic cues than to contextual cues when making corrections at the passage level. Evidence for this statement was found by examining the miscues appropriate at the passage level to determine whether the miscues were
similar to or different from the word in print and also to determine the proportion of corrections which were made for similar versus different miscues. The disabled seventh grade and average fourth grade readers made more than twice as many miscues that were similar to the printed word and they self-corrected twice as many similar miscues than different miscues. This suggests that these readers were paying closer attention to what words looked like than to their meaning.

The average fourth grade readers made a significantly (\( p \leq .005 \)) greater proportion of miscues that were not contextually appropriate than did the disabled seventh grade readers, but the reliability for this miscue category was very low, .33. Since this reliability and some of the other reliabilities of the two judges were low, one should be cautioned as to using oral reading miscue analysis for individual diagnosis. Analysis by one person would yield even lower reliabilities. Planning remedial programs based on one person's judgement of the miscues of a child's reading of 332 words is at present unwise. Many more samples of reading behavior and more than one judge of oral reading is necessary for stable findings.

Educators can yield some instructional information from the results of this study. Older disabled readers tended to make more miscues at the NOT, PRE, and SEN-
CONTEXT levels (i.e., meaning loss occurred) and they were not likely to correct these errors. In contrast, they were very likely (74) to correct miscues which did not change meaning. An examination of these corrected miscues showed them to be rated graphically similar to the printed word. Thus, the older disabled readers seemed to be paying closer attention to graphic cues than to meaning cues. Instruction could focus more on the use of contextual cues than on graphic cues because the graphic system appeared to be ineffective since the poor readers were evidently using graphic cues but still making miscues which led to less understanding of the author's intended meaning. Certain miscues, especially at the passage level, may not alter meaning. However, the poor readers self-corrected many more of this type of error than when the miscue resulted in meaning loss.

Emphasis on the use of semantic and syntactic information should be stressed in instruction. Possible measures that could be implemented in the classroom are using a variety of synonym exercises within the framework of context. The Cloze Procedure (Bormuth, 1968) in which every fifth word is left out could be used as a synonym exercise. Different words could be substituted for the word left out and then the student could decide if the meaning has changed or not. Phrase reading films, exer-
cises in which the student and teacher alternate asking questions after reading sentences, constructing several different sentence patterns while keeping the meaning unchanged and teaching structure or marker words like "because and although" within the context of language are other possible methods of semantic and syntactic instruction. Perhaps after such measures have been utilized, disabled older readers may be able to use more skills to gain more meaning from printed material.
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APPENDIX

Reading Passages
Story of 7th Grade Readability

Most American children first hear about Abraham Lincoln when they are very young. I certainly did. My grandmother spoke of him often. As a matter of fact, the exact term she used was "that old villian."

The Civil War, that terrible struggle that tore and divided the Northern and Southern states, lasted only four years; but the hatred and bitterness created remained far longer. The war had been over for nearly three-quarters of a century when I lived with my grandmother in Alabama, but to her it was as much alive as it had been when the first guns were fired.

Grandmother had grown up during the difficult years of the Reconstruction—the first years following the war. After its devastating defeat, she had seen her beloved South overrun by people who tried to profit from its misfortune, seeking plunder or political power. She had known grief, poverty, and many hardships because of the war. In her mind, the Northerner—the enemy—stood for evil and oppression. Like many Southerners, she was a staunch Democrat. To her, a Republican was untrustworthy at the very least, and most probably a complete scoundrel.

Consequently, Abraham Lincoln, as a Northern Republican and commander-in-chief of the Union forces,
represented the archenemy. I can remember only one occasion during my entire childhood when his name was mentioned in her presence without her bursting out, promptly and venomously, "That old villain!"

The single exception occurred when a young priest, recently arrived at our little Roman Catholic church, came to visit us. We were sitting on the porch, taking turns at the crank of the old ice-cream freezer, when the subject of great Americans somehow arose.

The young priest's face brightened as he mentioned Lincoln and praised the greatness of his soul and the depth of his goodness. I couldn't believe my ears. I looked at Grandmother. She was staring straight ahead, her lips compressed, her hands tightly clasped. Evidently her respect for the clergy was even stronger than her hatred for Lincoln.
That evening Giles had homework to do. He knew he would never be able to work downstairs with the television on or in the kitchen where Mr. Maxwell was. So he took his books up to the bedroom. Martin had gone off, and he had the bedroom to himself.

He had been working hard for almost an hour when the crashing of boots on the stairs and the sound of boys laughing told him Martin was on his way up with his group. It was no use trying to work with them in the room—even supposing they would let him stay there—so he began to pack his books up.

"You're here, are you?" said Martin, coming into the room first.

"I'm just going. I had homework to do."

"Homework! I never used to do any. I don't approve of homework. What I say is, if you can't get it done between nine and four, there must be something wrong with the school."

"I don't mind it," said Giles.

"Don't listen to him, kid," said Gribby, who was the drummer. "Old Martin never used to do any work in school. He's lazy."
"Look who's talking!" jeered Martin, squatting back on his bed and striking a few chords on his guitar. "I don't remember your taking any prizes at the end of the year."

Gribby took no notice of this; he was looking at Giles's work.

"Are we going to start, or aren't we?" Martin burst out in an angry voice. "Look," he said to Giles, "get those books out of here, will you?"

"Take it easy," said the drummer. "Do you want to eat the kid or something?"

"I just want him out!" growled Martin.

"Come on, Gribby," said one of the other two boys. "Let's get started!"

Giles quickly took his books, thinking at the same time that only a genius could find anything likable in Martin. Still, it was no use hanging around making trouble.