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THE EFFECT OF TEACHER RESPONSES TO
ORAL READING ERRORS ON
COMPREHENSION AND READING BEHAVIOR

A Dissertation Presented

By

JOHN ALEXANDER BACON

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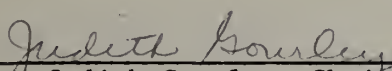
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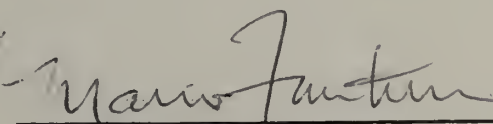
Dr. Judith Gourley, Chairperson of Committee



Dr. Rudine Sims, Member



Dr. Dalton Miller-Jones, Member



Dr. Mario Fantini, Dean
School of Education

ABSTRACT

The Effect of Teacher Responses to Oral Reading
Errors on Comprehension and Reading Behavior

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John Alexander Bacon

B.A., Dartmouth College

Ph.D., University of Massachusetts

Directed by: Dr. Judith Gourley

Research examining different instructional materials and methods in reading has often identified the "teacher variable" as a critical and mystifying factor in effective instruction. Other researchers have observed teachers responding to students' oral reading errors in different ways during reading instruction. The way teachers respond to errors may influence the way children read and learn to read. This study examined the effects of four types of teacher responses to oral reading errors on the number and quality of student errors as well as on comprehension.

Twenty children read four stories and retold everything they could remember after each story. The researcher responded to their oral reading errors by asking students to correct themselves, by supplying the appropriate word, by doing nothing at all, or by waiting until the end of those sentences which were anomalous and then asking if the sentence made sense. During each story, the researcher responded using only one of the response conditions. The

order of the four conditions was systematically varied, while the order of the four stories was kept constant.

The four teacher response conditions had significantly different effects on the number of errors that the children made, on their attempts to correct errors and on the quality of their errors. The response conditions also influenced the amount of information recalled by the children. The kinds of words that produced errors, and the number of non-word substitutions were not affected. From this study, the researcher concluded that not responding to errors produced more errors but without a loss of comprehension. The researcher also concluded that the response which focused on meaning by asking students if what they read made sense was the most desirable because it improved comprehension, correction behaviors and the quality of errors produced.

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C H A P T E R I

INTRODUCTION

Background

During the sixties the federal government funded a massive research project, "The First Grade Studies", to determine the most effective approach or method for teaching children to read. Different researchers across the country compared students learning to read through phonic, sight word, language experience, linguistic and modified alphabet approaches. The effectiveness of the different approaches was measured primarily by testing student gains on standardized tests. The results were analyzed to determine if sex, socioeconomic background, age, intelligence, classroom size, and other variables were interacting with the approach used to affect how well and quickly a student learned to read. No single method was identified as the most effective way to teach reading (Stauffer, 1967). Some teachers were successful using a particular method and materials while other teachers were ineffective using the same approach. The "teacher variable" was identified as being the most significant factor in learning to read. Good teachers could teach any group of children to read no matter what method they were using.

In a review of research on reading instruction (Chall, 1967), results were interpreted as indicating that children need more instruction which emphasizes decoding words. Other movements have touted

individualized instruction, open classrooms, and warm supportive teachers as the answer(s) to teaching children to read. And as the public became increasingly concerned about "the reading problem" and its growth, back to the basics, minimum competencies and teacher accountability movements have gathered strength. During the seventies the federal government declared war on illiteracy and funded Right to Read programs to improve the teaching of reading. However, despite the research, the various educational bandwagons, and the federal programs, we don't understand the significant "teacher variables" and we haven't identified or developed a set of methods for teaching reading effectively.

The teacher may be a crucial variable in learning to read because he/she determines the amount of time that a child practices reading in school and, at least initially, the strategies the child may use to read. What a teacher says and has students do obviously influences the way they learn to read. In the early elementary grades, most teachers have their students read orally a significant proportion of the time. As the child reads during his turn in a round-robin reading group or alone with his teacher, the teacher tries to see how well he is doing and to help him when he has difficulties. In these situations, teachers are often confronted with oral reading errors.

Correcting or not correcting a student's oral reading errors, or miscues, is a common element in reading instruction. Teachers at all levels of instruction choose to do something when a child makes miscues

no matter what method, approach, or materials they are using to teach reading. Thus, the way a teacher corrects a student may be a critical factor in what makes some teachers more effective at teaching reading. Perhaps good teachers are successful because they respond to miscues in ways that help the child to read with greater comprehension and to develop appropriate strategies for reading.

Problem

While listening to children read, teachers are continuously confronted by their students' oral reading miscues to which they must respond. The miscues may involve the substitution, insertion, or omission of a single word, they may be complex, involving more than one word, and they may or may not disrupt meaning. The teacher's response may be automatic or it may be a deliberate decision based on the circumstances involved, who the particular child is, and/or a theory of reading. Nevertheless, the teacher chooses to do or not to do something. Teachers have at least four distinct types of options in responding to miscues. They can stop the reader immediately and have the reader figure out the correct response, they can interrupt the reader and supply the appropriate corrections. They can wait to see if the child self-corrects before initiating a response. Or they can choose to do nothing at all. It may be valuable for teachers to know how these different responses affect students' reading behavior. The purpose of this study was to determine the

immediate effect of these four teacher responses by examining readers' comprehension, miscues, and corrections.

Overview of the Design

The subjects were asked to read four stories and to retell as much as they could remember about them. As the student read each story, the researcher responded to miscues using only one of the four response types. The students' miscues and retellings were analyzed to determine the effects of the teacher response condition on the students' comprehension, miscues and correction behaviors.

Rationale

Teachers choose to respond to oral reading errors in different ways depending upon their teaching style, the proficiency of the reader and the characteristics of the miscue (Roberts, 1973). These differences may or may not help the child do what he is trying to do. Some teachers supply the appropriate word(s), others may provide a hint or suggest a strategy for figuring it out like "sound it out", and others may delay or avoid responding to give the child a chance to self-correct. Some miscues may not be corrected while others are chosen for correction. Nevertheless, every teacher makes a decision, which is either deliberate or automatic, to do or not to do something in response to a miscue. Their choice reflects their implicit or

explicit understanding of how children read and learn to read; it is the practical application of their theory of reading, reading instruction, and learning in general. However, their choice may not be of much help to the student depending upon how accurate their theory or model is. It is possible that certain approaches for responding to miscues may actually impede the reader, disrupt his confidence, and/or cause him to develop inappropriate reading strategies and an inaccurate understanding of reading and its purposes. If teachers are to work effectively with children, it is important to know how different correction strategies affect students' reading. Very little is known about this interaction.

This study is significant because it examines the effects of teacher behavior on student behavior and performance during oral reading instruction in an experimentally controlled situation. This experiment was designed to simulate the instructional experiences of children but also has the advantage of providing an extensive amount of data because the student reads an entire story aloud. In many classrooms, students read only part of a story aloud and listen while the other members of a group take their turns. Thus, the experiment provides data for examining the effects of repeatedly exposing a reader to a single correction response over a much longer period of time. In addition, a large number of miscue episodes can be analyzed to determine the effects and interactions. These findings could be very useful for improving instructional procedures by suggesting appropriate teacher responses to miscues.

Theoretical Background

Because instructional procedures may be dependent upon a teacher's implicit theory of reading, reading theories (models) need to be examined to understand and speculate how theories might be applied to practice. Most models of the reading process can be categorized as either "perceptual" or "hypothesis" type models (McConkie and Rayner, 1976). The major difference between the two is how and when semantic and syntactic information from the context is used during the reading process and more specifically for what purpose it is used.

The perceptual models claim that words located in a context are identified no differently than isolated words, while hypothesis models claim that contextual information facilitates the reading process at the word level as well as at syntactic and semantic levels. In perceptual models, contextual information is used to integrate words into meaningful units only after the words have been identified through letter analysis. Hypothesis models, however, provide for an interaction of higher order information from the semantic and syntactic context at lower levels of analysis, such as word and letter levels. This interaction might be described as the reader deciding "what would fit here that looks like the image I'm forming?" and "what image can I form that would fit here?" as he reads. Although it is unclear how information from lexical, syntactic, and semantic levels interacts, there is substantial evidence from different studies that it does (Rumelhart, 1977).

Many skills and word-oriented approaches to reading instruction are based on perceptual models of reading (Gough, 1977; LaBerge and Samuels, 1974) which appear to be an accurate description of the reading process based on intuition and stimulus-response theories of learning. Reading is described as a simple hierarchy of information processing involving learning to identify letters and then words from phoneme-grapheme correspondences, spelling patterns, and word patterns. At a later stage in the reading process words are combined to understand the sentence, presumably in a way similar to listening.

The perceptual theory focuses teachers and students primarily on words and other small units rather than on larger units of meaning. The logical extension of this theory, therefore, is to correct a student when he makes a miscue to avoid reinforcing an error because accuracy in recognizing words is the essential skill in reading. If a child is going to become a good reader, he has to be a good decoder, and since the only information useful to him in recognizing words is the graphic display itself, teachers must have him decode the letters accurately. Meaning isn't of concern at this point; it takes care of itself later. Teachers who have a skills/word-oriented approach to reading instruction generally have an implicit perceptual model of reading and are likely to respond to miscues immediately either by supplying the appropriate word, by suggesting a strategy to figure the word out (sound it out, what does it begin with?, what does it look like?, etc.), or by giving the student a hint to use (it rhymes with...).

Hypothesis models of reading (Goodman, 1970; Rumelhart, 1977), are used to support holistic approaches to reading such as individualized reading, language experience, sustained silent reading and assisted reading. From this perspective, teachers may argue that reading is a language process in which the reader uses visual as well as contextual information to construct meaning from print. "Getting the word" isn't nearly as important as "getting meaning"; in fact, given the context of a meaningful story children can identify words that they failed to recognize in isolation (Goodman, 1965). Their focus on constructing meaning and the importance of practice with meaningful units of language distinguishes these teachers from the word-oriented teachers who are informed by a perceptual model. Because advocates of holistic approaches believe that meaning is important and that there is an interaction of information from more than one source due to the constraints and redundancies of language, they are less likely to respond immediately to a miscue and are more likely to be selective about what they respond to and how they respond depending upon the situation in which the miscue occurs. Choosing to wait to see if a child self-corrects is based on the understanding that reading is supposed to make sense and sound like language and on the hope that children will recognize that they've made an error when reading doesn't make sense. An appropriate strategy for responding to miscues might be to do nothing at all or to wait before responding and then ask the student if what he has read makes sense. Then the teacher might ask the student to reread the sentence before helping

him by suggesting specific word attack strategies, hints, or the appropriate word if he is still unable to figure things out and the miscue is crucial to the meaning.

Depending upon the theoretical perspective, there are both advantages and disadvantages inherent in the different teacher response patterns. These responses may affect students in different ways, contributing to the "teacher variable" and may be more significant than instructional method in determining the success students have in learning to read.

By correcting students immediately, teachers point out inappropriate responses and are able to immediately provide students with some form of help or instruction in that particular error episode. But this kind of feedback may frustrate the student by disrupting what he is trying to do. It may also undermine his confidence and willingness to take chances if he isn't absolutely sure about something. Immediate correction may also cause the student to become overly sensitive to grapho-phonetic information and read word by word rather than reading for meaning, using contextual information as well as grapho-phonetic information. The primary disadvantage, however, is that the student no longer has the chance to use the rest of the text to discover that what he has said may be either inconsistent with the text or semantically anomalous. The student not only loses a chance to self-correct but loses an opportunity to develop and reinforce self-correction strategies. The amount of time involved in responding to miscues may also be important because it interrupts the

student's thought processes and comprehension. A considerable amount of time may elapse as a child "figures out" the word, during which the student may forget the beginning of the sentence. A word supply response, however, may allow the reader to proceed without having lost the meaning from the beginning of the sentence. Thus, the student may be able to continue using all of the cueing systems available rather than having to get going again with primarily grapho-phonetic information.

By delaying or avoiding a response to miscues, teachers provide students with an opportunity to recognize that they must have made an error because what they are reading is anomalous. The reader may then either regress to change what he said, correct himself silently, or read on for clarification. By waiting until a student completes the sentence before responding, the teacher has probably given the reader sufficient time to self-correct. At this point, teachers may be able to help the student without any negative consequence. Other teachers may claim that readers do go back and correct themselves over larger units than a single sentence or that verbally uncorrected miscues may have little effect on the child's understanding of the entire text.

Some teachers may argue that if students are going to develop into mature independent readers, they need to engage in and practice the reading process, not play at it in instructionally controlled situations. Obviously, more proficient readers are more likely to be successful at correcting miscues without the teacher's help. But because the ultimate goal of instruction is producing a reader whose

ability is not dependent upon teacher feedback, teachers should perhaps be willing to tolerate miscues, even those miscues which change or lose the meaning, so that the reader can develop appropriate strategies for handling miscues. Furthermore, according to signal detection theory, teachers must also be willing to accept some errors in order to get readers to take risks and make more responses when they are uncertain about the stimulus (Smith, 1971).

The potential disadvantages and risks involved in delaying or avoiding a response may outweigh the potential advantages especially for the teacher with a word-oriented perceptual theory of reading. If the reader fails to recognize that he has lost the meaning, an inappropriate response may be reinforced. The teacher loses an immediate opportunity to teach a missing skill or correct a misconception. The reader might also proceed to the next sentences without a complete understanding of what he has read and might have to infer information that he missed earlier. Another drawback is that there might be optimum periods, as a reader develops, for different kinds of feedback. Early readers often read very slowly; therefore, delaying or avoiding feedback might be a more appropriate strategy for readers who can go faster with less attention to individual words. Faster readers may benefit more from delayed feedback because they have developed their word recognition skills to a level of automaticity at which they can more easily attend to meaning because their mental capacity isn't being spent on decoding words.

In part, the strategy that a teacher chooses is also dependent on his understanding of miscues or oral reading errors. Miscues are a natural part of the reading process for both beginning and proficient readers. Miscues are not random errors (Weber, 1968, 1970; Goodman, 1967). The term miscue was purposely invented to avoid the negative and inappropriate associations implied by the phrase "oral reading error", and to replace the phrase with a term which is neutral. The study of miscues reveals that some miscues can produce sentences which have the same or almost the same meaning as the text. Thus, there is a sense of quality or respectability to those miscues which do not lose or change the meaning. Many teachers may not understand that miscues are natural, that some miscues are better than others, that some miscues do not change the meaning, that language has its own built-in system of feedback, and that readers can and do self-correct. These teachers are, therefore, more likely to look at miscues as errors which need to be corrected, unlike teachers who understand the nature of miscues and are, therefore, more likely to respond in different ways to different kinds of miscues.

Thus, in addition to the timing and form that can be selected for a response, teachers can also select different kinds of miscues for a response. Goodman (1970) suggests that teachers should respond to miscues in ways that encourage children to develop reading strategies which will help them become independent readers. She points out that some miscues do not change or lose the meaning of a text and are therefore not detrimental to comprehension. If miscues disrupt the meaning

however, she urges teachers to wait and then ask questions like, "Does it make sense to you?", which would train children to read for meaning. Goodman also argues that helping a reader immediately will restrict his opportunities to discover and use the different cue systems in written language.

Classroom observations find that teachers, as Goodman suggests, are more likely to respond to low quality miscues which disrupt the meaning (Roberts, 1973). Other studies (Goodman, 1973) found that readers are more likely to spontaneously correct the same kind of miscues. This is not surprising because once a reader has made a miscue which produces a meaningful sentence, there is often nothing to indicate that a miscue has been made. Responding to low quality miscues may be a superior approach because it reinforces what readers are already likely to do and because it develops independence. Furthermore, sometimes a miscue may fit acceptably with the portion of a sentence which comes before it but may not fit with the rest of the sentence. Therefore, perhaps teachers should delay their response until after the miscue in order for the reader to discover the anomaly. Delaying responses also provides readers with more time during which they can read further to make certain that a sentence is anomalous.

Synopsis

To summarize, teachers have choices as to the form and timing for responding to miscues and choices about the criteria they use for

selecting miscues for response. While there are many different choices possible, the response reflects the teacher's understanding of the reading process. The timing and form of responses as well as the nature of the miscue could have a significant effect on the student's comprehension, his performance and/or the reading strategies he develops. This effect may be related to the "teacher variable" which determines student success in learning to read. This study represents an initial attempt to define and measure the effects experimentally.

C H A P T E R I I
REVIEW OF THE LITERATURE

It is surprising that there is so little research on the effect of teacher responses to miscues and the relation between miscues and instruction, especially when the tremendous number of studies on different types of reading instruction is considered. The few studies of the influence of teacher response and instruction on miscues provide a promising foundation for work in this area, however. These studies will be reviewed after an introduction to miscue analysis, first by concentrating on selected studies which examined the influence of instruction on the development of reading strategies as revealed by the kinds of miscues beginning readers made. Later, studies which documented the differences in teacher response during error episodes and/or the success of those responses in producing correct responses will be presented. And finally, two studies will be discussed which are more concerned with the broader effects of teacher responses to miscues on the reading process rather than on the words immediately involved in an error episode.

Researchers have studied oral reading errors, or miscues, from two perspectives (Weber, 1968). Many of the early researchers approached oral reading errors as "simple misperceptions of words and letters" without concern for the error's meaningfulness. More recently researchers have been interested in the degree to which an error maintained or created a meaningful linguistic unit. First graders, for

instance, are most likely to substitute identical parts of speech when they make an oral reading error involving the substitution of one word for another (Weber, 1967). Based on the perspective that oral reading errors are meaningful and not random mistakes, Goodman has developed a taxonomy for classifying and studying oral reading errors (Goodman, 1969). This taxonomy analyzes the grapho-phonetic, syntactic, and semantic proximity of the error to the expected response, attempts by the reader to self-correct, what might have caused the error, and what effect the error had on the meaning.

Goodman's work is based on the idea that oral reading errors are caused by the same process which produces the expected responses, that the errors are often meaningful, and that because they are caused by the same process, they are "windows on the reading process". The term "miscue" is used as a synonym for oral reading error because it is a neutral term. Goodman's miscue taxonomy has enabled researchers to analyze miscues in terms of units larger than individual words and to focus on the miscue as a natural part of the reading process. This interest in miscues raises questions about the nature of the reading process and how well a particular reader is engaging in it. Goodman concludes that reading is a complex process in which the reader uses his knowledge of the world, language, and print to interact with the print to construct meaning, and that miscues reveal how the reader is interacting with the print.

In a study by Biemiller (1970), the miscues of first graders were recorded over the course of eight months to determine how first graders

used contextual information and grapho-phonetic information. The miscues revealed that beginning readers passed through three stages of development. Initially the readers produced miscues constrained by the semantic and syntactic context. Afterwards students tended either to produce miscues which were graphically similar to the expected response or not to respond at all. Their miscues frequently did not fit with the preceding context. And finally toward the end of the year the students produced miscues which reflected both graphic as well as semantic and syntactic information. These stages were interpreted by Biemiller as showing the reader's developing proficiency at decoding words as well as the influence of instruction. Based on experiences listening to language, the reader initially uses his knowledge of the world and language to guess when he is uncertain. Biemiller hypothesized that, later, because of instruction in identifying words, the reader seems to abandon the cues from the context and uses the grapho-phonetic information almost exclusively. Only afterwards does the reader begin to use reading strategies similar to those of proficient readers in which miscues seem to be cued by both graphic and contextual information. Thus, the kinds of miscues that a beginning reader makes appear to reflect not only different stages in development but the influence of instruction in developing strategies for reading and, in particular, the student's skill at using grapho-phonetic information.

In a short term study of first graders reading words in isolation (Barr, 1972), substitution errors and non-responses to printed words

were analyzed to determine if phonic instruction and sight word instruction had similar or different effects on the developmental stages discovered by Biemiller. Barr found patterns of errors similar to Biemiller's stages but these patterns were dependent upon the type of instruction, suggesting that reading strategies are both instructionally and developmentally based. Students taught with a sight word technique substituted words constrained by the group of words already taught. Students taught with a phonic approach, however, either did not respond or tended to produce substitutions which were graphically similar but not restricted to real words or the words which had already been taught. Barr interpreted these differences as corresponding to Biemiller's stages. Sight word subjects were constrained by the set of words they already knew, but the phonic subjects, who were learning more about decoding print, were basing their answers on the graphic display.

In a follow-up study Barr (1974) collected a sample of errors at the beginning, middle, and end of an instructional year. These errors from word lists and from meaningful passages were analyzed to determine the kind of strategy that a reader was using and to see if that strategy was consistent with the kind of instruction being received. Barr was able to identify a reader's strategy based on certain qualities of his miscues. She also found that readers, if not initially, eventually employed the strategies taught in class for identifying words. Readers employing sight word strategies tended to produce miscues which were restricted to the group of words they had been taught, which were

semantically acceptable and/or which often did not look like the expected response. However, readers using phonic strategies tended to make miscues which were drawn from the child's spoken vocabulary, which were occasionally non-words or semantically unacceptable and which looked like the expected response. These findings confirmed her previous analysis. Thus, different kinds of instruction appear to influence beginning readers to use different reading strategies which are reflected in the characteristics of their miscues.

Although these studies indicate that reading behavior is affected by the way children are taught, the studies are concerned with the impact of instruction in general and do not look at the role of the teacher in particular instances. More specifically, the studies are concerned only with miscues in relation to ongoing instruction and not with error episodes which involve not only the miscue but the teacher's response and the effect of that response on the student. Several researchers have examined error episodes and attempted to record the relationships between miscue type, various teacher responses, and the effects of those responses (Allington, 1980; Hoffman and Baker, 1981; Jenkins and Larson, 1978; Mitchell, 1980; Roberts, 1973; Terry and Cohen, 1979). These studies found that teacher responses to student miscues varied according to student ability and had different effects on the student's ability to correct his miscue and recognize the same word again.

In an investigation of error episodes during primary reading groups Allington (1980) found that teachers responded differently to

the miscues of poor readers. Poor readers were interrupted 74% of the time that they made a miscue; this was much more frequent than the 31% of miscues responded to for good readers, especially since the good readers made fewer miscues. While the frequency of interruption was independent of the quality of the miscues involved, the type of interruption was related to the ability of the readers. Poor readers received more prompts intended to help them get the word, while good readers were more frequently directed toward syntactic and semantic information.

Allington's findings are particularly relevant to this study because teachers responded differently to good readers than to poor readers. Perhaps teachers reinforce and perpetuate the lack of proficiency among poor readers by responding more frequently and by using word oriented prompts. Teachers correcting miscues in this manner regardless of the miscues' quality, are likely to make students word oriented rather than meaning oriented readers. Thus based on Allington's findings, there is certainly a correlation between poor reading and teacher response patterns and this relationship may be causative in nature as well.

In another study of teacher-pupil interactions during error episodes Mitchell (1980) was able to correlate teacher response types or patterns with those teachers' theoretical backgrounds and training. One group of teachers was more concerned with meaning. This group was more tolerant of miscues, especially if the miscue was semantically and syntactically acceptable. The other group was more

interested in using miscues as an opportunity for the student to learn new words. This group stressed accurate reading and the correction of miscues. It is of interest in relation to the research reported here that the readers began to adopt behaviors which were consistent with the teachers' approaches after only three hours of tutoring.

Using another observational system to code and study the verbal and nonverbal behavior of students and teachers in first grade reading groups, Roberts (1973) also found that teacher responses to miscues seemed to be influenced by the teacher's style. Teacher responses were influenced further by the reader's proficiency and the type and/or quality of the miscue. Examining how teacher responses varied between high and low level reading groups revealed that teachers were more likely to wait before responding, or not to respond at all to the miscues made by better students. But with poor readers, teachers were more likely to correct students or give them information to use in figuring out the word(s).

Although the miscues were not analyzed to determine their "quality" or "meaningfulness", the miscues were grouped according to type (substitution, omission, insertion, reversal and "non-reading response"). Both good and poor readers made the same types of miscues; although the distribution in the proportions of the miscues among the various types varied according to the ability level of the reading group. Other studies (Cohen, 1974; Gallimore, Thorp and Speidel, 1976) which investigated the differences between good and poor readers found very similar results.

In her examination of self-correction behaviors, Roberts found that the distribution of student corrections across the sample was primarily a function of the teacher. The students of some teachers corrected themselves more frequently than students from other classes. In addition to the teacher's effect but to a lesser degree however, correction behaviors were also affected by the reader's proficiency and the quality of the miscue. Although it was unclear from the data how these three factors interacted to influence corrections, it was clear that the variations in teacher behavior were associated with differences in the distribution of correction behaviors by class within the sample. Roberts commented that these results have strong implications for further study in controlled situations.

Roberts' study raises other interesting questions for examination. Perhaps the similarities in the types of errors made by good and poor readers are an indication that good and poor readers are to some degree learning to read in the same manner. And perhaps teachers make it more difficult for slower readers to improve by responding to miscues in ways which differ from the responses made to good readers' miscues. If teachers assume that poor readers need a response which will help the reader decode words, the teachers will distract that reader from making sense of what he is reading. Teacher responses which correct a reader or help him figure out a word may be more likely to make him read word by word and rely more heavily on grapho-phonetic information.

In a study of the success rate of teacher prompts at helping students produce correct responses to unknown words, teacher responses also varied depending on reader proficiency (Terry and Cohen, 1977). The study trained tutors to use a variety of prompts; unlike Roberts' findings, however, the poorer readers received proportionately more contextually based prompts. The startling finding, however, was that no one type of prompt or teacher response was more successful than another at helping the high or low level readers decode unknown words in context. The tutors used their perceptions of the reader's ability in selecting their response type. Both low level readers and high level readers, however, could be successful with any kind of teacher response. Teacher responses which focused the student's attention on the whole word or part of the word were the most frequently successful for both groups. And not surprisingly, the better readers were also the most successful at using teacher responses to decode unknown words. Perhaps the readers were most successful at using prompts which focused on words because the prompt matched their strategy for reading. But since readers were able to use different kinds of prompts, perhaps teachers should respond to student miscues in ways that encourage students to use those strategies which combine contextual and graphic information and are typical of mature readers. Unfortunately, the tutors were not trained in delaying or avoiding responses to miscues, and the researcher only looked at word accuracy and did not measure miscue quality or comprehension.

Arguing that skill at recognizing words was a legitimate and important goal, especially for remedial readers who are less likely to be able to use the contextual information available to them for decoding words, Jenkins and Larson (1978) studied the effect of various word supply responses and a drill approach to correcting errors made during oral reading. When the learning disabled reader made an error, the researcher either supplied the correct word and asked the student to repeat that word using various combinations of the text, or recorded the words and taught the child to recognize the words through a drill procedure afterwards. The drill procedure was found to be the most successful at helping students to name the words later both from lists and within the context of the sentence in which they originally appeared. The word supply condition was slightly but not significantly superior to not correcting the student at all, and word supply combined with some repetition of the word in the sentence was still better but not nearly as successful as the drill procedure. The authors recommend that the drill procedure is an efficient way to correct errors which teaches students to recognize words. They make no claims, however, about the procedure's success at developing proficient reading strategies or comprehension.

These studies (Terry and Cohen, 1977; Jenkins and Larson, 1978) of error episodes have examined the nature of the teacher response and its immediate impact on the student's success at naming words. They have focused on reading at the word level without considering comprehension, and have not examined the effect of teacher

response on the ongoing process of reading or the development of reading strategies. How do teacher responses in error episodes affect the reader as he encounters new sections of the text and how do teacher responses help him develop proficient reading strategies?

Kirby (1975) found that not correcting the miscues of remedial readers actually increased the number of words correctly read per minute in connected discourse. The word supply condition tended to reduce the number of correct responses per minute. Although the conditions didn't always affect the error rate per minute, praising correct responses tended to decrease the error rate per minute and correcting miscues tended to increase the number of errors made per minute. This study provides evidence for not correcting miscues if the goal is reading rapidly with fewer miscues. By correcting miscues the researcher actually hurt the reader's performance, possibly because the corrections made the reader more cautious.

Pehrsson studied the effects of both teacher instructions prior to reading a passage and teacher corrections on comprehension and reading rate (Pehrsson, 1974). When fifth grade students were instructed to read for meaning and the researcher did not interfere by supplying correct responses, the students read faster with greater comprehension. Instructing students to pay close attention to the words or correcting their errors slowed readers down and made it more difficult for them to retell the story successfully. These findings were significant and support not correcting miscues, in the short run at least. However, younger students may need some

form of help especially if they are still developing reading strategies.

From the literature reviewed, it appears that reading instruction affects both the kind and quality of miscues readers make. The miscues of young readers reflect not only the mode of instruction that the student has been exposed to but the student's reading strategies. The research also shows that teachers respond to student miscues in different ways depending on their teaching style, the reader's ability, and the nature of the miscue. Different kinds of responses were found to affect the student's success at correcting or learning words, the student's comprehension of the text, the student's oral reading rate and the student's accuracy in oral reading. Given these findings, one can logically speculate that teacher responses to miscues might also affect the strategies that the reader uses. Investigating the effect of teacher responses beyond the immediate context of an error episode might prove to be fruitful in determining the optimal teacher response for helping readers develop productive reading strategies. Thus, the studies reviewed in this chapter form the foundation for the study reported in the next chapter which was designed to examine the effects of different teacher responses.

C H A P T E R I I I

METHODS

Overview of the Procedure

The study's design called for each child to read four stories in the same order and, immediately after each story, to retell everything he could remember about that story. During each story, the researcher responded to the child's miscues using one of the four response conditions: Delayed Response, No Response, Correction or Word Supply. These four conditions reflect two primary theories of reading, (the "perceptual" and the "hypothesis models") and incorporate varying dimensions of the timing, focus and responsibility involved in teacher responses. The nature and timing of the Word Supply and Correction conditions tends to focus the reader on naming words accurately with the teacher taking responsibility for monitoring the process. In the Delayed Response, the responsibility is shared by both the teacher and the student because of the timing involved and the focus for reading shifts from words to meaning. The student in the No Response condition is responsible for not only determining the focus but also for maintaining it, while the teacher has no role at all.

While the order of the four stories was the same for all of the subjects, the order of the response conditions was systematically varied. Each session was taped and then transcribed onto a copy of

the text. The subject's correction behaviors, comprehension and miscue quality were then analyzed to determine the effects of the different treatments.

Sample

Teacher judgment was used to select twenty children who could read the materials chosen for the study. The readers were selected from two small rural schools in communities of middle and working class people. The majority of the students were finishing second grade; although some were in first and third grade classes. Six of the children were boys and fourteen were girls. The sample included an equal number of students from each town with an equal distribution of girls and boys.

Observations during reading groups and interviews with the teachers revealed that the children's teachers responded to miscues in several ways. All of the teachers corrected miscues by supplying the appropriate word or by letting other children supply words. The teachers also stopped students and had them correct themselves. Frequently the teachers suggested strategies such as "sounding it out" or identifying parts of the word, or helped their students with clues about sounds, letters, or meaning. Occasionally the teachers "overlooked" errors especially if the meaning was preserved. All of the teachers were unfamiliar with the Delayed Response approach to correcting miscues.

In one school there was an emphasis on decoding. The "Keys to Reading" basal reading program by The Economy Company was used as the core of the program; frequent writing activities and a silent reading period each day supplemented the basal program. The teachers encouraged students to use grapho-phonetic information to sound out words.

The other school's program placed a stronger emphasis on language and meaning although there was some phonics instruction. Initially language experience activities and the "Reading Unlimited" program by Scott Foresman and Co. were used to teach children how to read. Writing and sustained silent reading were also used to supplement the program. In both schools, children were grouped for instruction in small groups according to ability. Although the instructional programs differed in some respects, it was decided to pool the data from all the children for purposes of analysis because of the similarity in teacher response patterns to miscues.

Materials

Four stories of approximately equal difficulty were selected from three major basal reading programs:

Story Number	Title	Publisher's	Story Length
		Instructional Level	
#1	"The Fiddler and the Cat" in <u>Reading Unlimited</u> . Glenview, Ill.: Scott Foresman & Co., 1976.	3.2	1009
#2	"Dragon Stew" in <u>Reading 720</u> . Lexington, Mass.: Ginn & Co., 1976	3.2	1710
#3	"Sheidulla" in <u>Reading Basics Plus</u> . New York, N.Y.: Harper & Row, 1977.	4	1102
#4	"The Emperor and the Kite" in <u>Reading Basics Plus</u> . New York N.Y.: Harper and Row, 1977.	4	1317

Care was taken to select stories with strong plots and with conflicts that were resolved so that the children read materials in which something happened. The stories were selected from materials intended for readers who were approximately a year more proficient as readers than the subjects. It was intended that the materials be slightly difficult so that miscues would be made but not so difficult that readers could not work independently. The stories were presented to

the readers in the original textbook. None of the stories was familiar to the subjects.

Procedure

Prior to starting each story, the researcher told each child that he should read the story as well as he could and that at the end of the story he would be asked to tell what happened in the story. Depending on the response type, each subject was also told either that he would be helped if he needed it or not helped at all. Every session was audio tape recorded and the researcher worked with each student individually. Children read the four stories on four successive days. The order of the four stories remained constant while the order of the four teacher response conditions was systematically varied. (See Table 1.)

When a subject made a miscue, the researcher responded in one of four ways depending on the response condition. In the Correction condition, the researcher stopped the reader after each miscue as the subject started to say the word which followed the miscue. The timing was intended to provide a chance for the subject to correct his miscue. The researcher then pointed to the location of the miscue and asked, "What is that word?" If the reader failed to correct his miscue, the procedure was repeated. If the subject was then still unable to correct his miscue or gave up trying to correct himself, the appropriate word(s) was supplied by the researcher.

TABLE 1

Order of Presentation of the
Teacher Response Condition

<u>Subject</u>	<u>Story</u>			
	1	2	3	4
1	WS	NR	DR	C
2	WS	NR	DR	C
3	WS	NR	DR	C
4	WS	NR	DR	C
5	WS	NR	DR	C
6	C	DR	NR	WS
7	C	DR	NR	WS
8	C	DR	NR	WS
9	C	DR	NR	WS
10	C	DR	NR	WS
11	DR	C	WS	NR
12	DR	C	WS	NR
13	DR	C	WS	NR
14	DR	C	WS	NR
15	DR	C	WS	NR
16	NR	WS	C	DR
17	NR	WS	C	DR
18	NR	WS	C	DR
19	NR	WS	C	DR
20	NR	WS	C	DR

Key: WS= Word Supply Response

NR= No Response

DR= Delayed Response

C= Correction Response

In the Word Supply condition, the researcher again waited to see if the reader would correct himself spontaneously. If the subject did not correct himself, the appropriate word(s) was supplied by the researcher as the reader proceeded to the next word. The researcher would point to the location of the miscue and say "This word is...".

In the Delayed Response condition, the researcher would wait and respond at the end of those sentences in which the reader made one or more miscues which produced a semantically unacceptable sentence or a sentence which was inconsistent with the meaning of the text. When this occurred, the researcher responded by asking, "Does that make sense?" The student was then asked to reread the sentence. If after two attempts the reader was still unable to produce an acceptable sentence, the researcher would read the sentence correctly and allow the child to proceed. If two or more sentences had been combined by the author into one long sentence, the researcher would respond at the end of each clause within the complex sentence. If the reader regressed and corrected himself spontaneously or if the miscue produced a sentence which was both semantically acceptable and consistent with the rest of the text, the researcher did not respond in any way.

In the No Response condition, the researcher did not respond at all to a student's miscues. The researcher encouraged the students to continue as best they could when they made miscues or became bogged down.

The Correction and Delayed Response conditions were similar to the Word Supply condition in that the researcher eventually supplied the word. But it was expected that the effects on the subjects would be different in the three conditions. It was felt that words might have to be supplied in the Correction and Delayed Response conditions only infrequently. Furthermore, it was assumed that it is probably common practice for teachers to eventually supply words once they have interrupted a student. Supplying the word also facilitated the experiment by allowing subjects to continue reading.

Immediately after each reading, the child was asked to close his book and tell the researcher as much as he could remember about the story "starting at the beginning and going to the end." The researcher listened attentively and encouraged the subject to continue by smiling and acknowledging information as the student retold the story. When the student stopped, the researcher asked general questions, such as "Can you tell me more about that?" or "Anything else?". The researcher then asked three specific probe questions which were designed to elicit as much information as possible about the story. The researcher was careful not to suggest information through his questions. When possible, especially during the general questions, the researcher tried to build on the information already retold by the subject. This procedure was similar to the RMI retelling procedure except that only literal recall was solicited.

The researcher responded to omissions, insertions, reversals and substitutions as specified earlier in the description of the

response types. The researcher did not respond to dialectal variations or misarticulations in the readers' pronunciations. Nor did the researcher respond to self-corrections, regressions, and repetitions.

Research Design and Analysis

The subjects, stories and response conditions were arranged to form a Latin Square design. Each subject read all four stories in the same order. The subjects were randomly divided into four equal groups and each group received the four teacher response conditions in a different order. The order of the four conditions was arranged so that one of the four groups of subjects was exposed to each teacher response condition while reading the first, second, third, or fourth stories. Thus, the order of the response conditions was systematically varied to counterbalance any interactions among the conditions across the entire sample, and each story was read under all of the teacher response conditions. This produced a 4 x 4 design with six independent variables. (See Table 2.)

TABLE 2

LATIN SQUARE DESIGN

	Story/Condition			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Correction	5	5	5	5
Word Supply	5	5	5	5
Delayed Response	5	5	5	5
No Response	5	5	5	5

Independent Variables. The six independent variables were:

- (1) Correction Response
- (2) Word Supply Response
- (3) Delayed Response
- (4) No Response
- (5) Story difficulty and story order (confounded)
- (6) Differences between the groups receiving different orders of the response conditions

Dependent Variables. Eight measures of reading performance were selected as dependent variables. These were:

- (1) Percentage of story retold (comprehension)
- (2) Average number of miscues

- (3) Percentage of miscues spontaneously corrected
- (4) Percentage of semantically unacceptable miscues corrected
- (5) Percentage of semantically acceptable miscues
- (6) Percentage of syntactically acceptable miscues
- (7) Percentage of non-word substitutions
- (8) Percentage of miscues on function words, pronouns, helping verbs, or articles

To prepare the data for analysis, each subject's miscues were transcribed from a tape recording to a copy of the story. A uniform marking system similar to the procedures used by the Reading Miscue Inventory was used, with certain modifications to record the timing, sequence and content of both the researcher's and the subject's verbalizations during the error episodes.

Because the stories were different lengths, only the first thousand words were analyzed to control for differences that might be caused by fatigue during the longer stories. The samples were also considerably longer than the amounts of texts customarily read by an individual during oral reading groups. It is possible therefore, that under certain response conditions the subjects may have developed strategies by the end of a story which were not apparent in the sample analyzed. However, it was felt that the sample had to be selected in this way in order to be confident about comparing results across the different conditions and stories.

After the miscues were marked onto a copy of the text, each miscue was coded onto a coding sheet and classified according to five

dependent measures: spontaneous correction, semantic acceptability, syntactic acceptability, non-word substitutions, and miscues produced by function words, pronouns, helping verbs or articles. If the reader corrected or attempted to correct a miscue before the researcher responded, the miscue was coded as a "spontaneous correction." If a miscue produced a syntactically appropriate sequence up to and including the miscue, it was coded as "syntactically acceptable." If a miscue produced a meaningful sequence of words up to and including the miscue, it was coded as "semantically acceptable." If two miscues were adjacent and if the first miscue was syntactically and/or semantically acceptable, then the second miscue could also be acceptable if it appropriately continued the sequence of words leading up to it. If two miscues occurred in the same sentence but were not adjacent, the first miscue was always read in the corrected form regardless of whether it was corrected by the reader when the acceptability of the second miscue was determined. This was necessary in order to compare the findings across the four response conditions. No miscue could be semantically acceptable if it were syntactically unacceptable. If the miscue was not a real word, it was coded as a "non-word." If the expected response was a preposition, article, conjunction, pronoun, or helping verb, the miscue was coded as having occurred on a short, high-frequency word. Three additional outcomes were used to measure the effects: retelling score, the average number of miscues, and the spontaneous correction of semantically unacceptable miscues. (Please see Appendix A for samples of the story transcripts.)

From these raw figures, the mean number of miscues for the total sample as well as for the first and second five hundred words were calculated. The percentage of miscues classified according to the five dependent measures were calculated. The percentage of semantically unacceptable miscues that the reader attempted to correct was also computed. These percentages were changed to four digit numbers using the arcsin transformation so that they would be in a compatible form for the program used to analyze the data.

The comprehension variable, a subject's retelling score, was computed by comparing the characters and events recalled by the subject against a master outline of the major characters and events in the plot. This produced a ratio from which the percentage of information recalled could be calculated. For example, recalling six out of seven possible events produced a ratio of $6/7$ or $.857$. No attempt was made to weigh certain information as more important and only literal information mentioned in the text was measured. (Please see Appendix B for the master comprehension outlines for each story.)

The effects of the four teacher response conditions on the number of miscues, the spontaneous correction of miscues, the semantic acceptability of miscues and the syntactic acceptability of miscues were analyzed by computer using the University of Massachusetts Psychology Department's SPSS Program for the analysis of variance for Latin Square designs. Differences were determined to be significant if they were at the $.05$ level of confidence or greater. Because the design did not contain every randomly possible arrangement of the

response conditions, it was impossible to analyze interactions between the response conditions and the stories other than to determine that an interaction existed. Differences in the retelling scores, the percentages of non-word substitutions and the percentages of miscues on short high frequency words were analyzed descriptively because there was not sufficient variation in the data to warrant testing for significance.

These procedures made it possible to determine if the differences in the teacher response conditions produced differences in the dependent variables. The results section addresses the following questions:

- (1) Were there differences between the teacher response conditions in the numbers of miscues?
- (2) Were there differences between the teacher response conditions in the quality of the miscues?
- (3) Were there differences between the teacher response conditions in the subjects' correction behavior?
- (4) Were there differences between the teacher response conditions in the percentage of miscues on function words, articles, pronouns and helping verbs?
- (5) Were there differences between the teacher response conditions in the percentages of non-word substitutions?
- (6) Were there differences between the teacher response conditions in reading comprehension?

It was anticipated that the No Response condition would serve as a baseline or norm against which the effects of the other response

conditions could be compared. Because the Delayed Response focused the reader on meaning, the researcher predicted that the Delayed Response condition would improve the subjects' comprehension and increase the percentage of miscues corrected and the percentage of high quality miscues. Because the Word Supply and the Correction responses focused the reader on words and accurately naming words, the researcher predicted effects opposite to those of the Delayed Response. In the Word Supply and Correction conditions, it was anticipated that the total number of miscues would decrease, that the subjects would name more accurately the short, familiar words and that the percentage of non-word substitutions would increase. On the other hand the researcher also predicted that the Word Supply and Correction conditions would disrupt the childrens' comprehension and lead to a lower percentage of high quality miscues. And even though there were more low quality miscues, fewer corrections were predicted. It was not anticipated that the subjects would be affected differently by the Word Supply condition than they were by the Correction condition.

Hypotheses

- (1) In the Word Supply and Correction conditions the subjects would make fewer miscues than in the Delayed Response and No Response conditions.
- (2) In the Delayed Response condition, the children would have a higher percentage of high quality miscues than in the

Correction, Word Supply, and No Response conditions.

- (3) In the Delayed Response condition, the children would correct a higher percentage of their miscues than in the Correction, Word Supply and No Response conditions.
- (4) In the Word Supply and Correction conditions, the children would have a higher percentage of non-word substitutions than in the Delayed Response and No Response conditions.
- (5) In the Word Supply and Correction conditions, the children would have a lower percentage of miscues on function words, articles, pronouns and helping verbs than in the Delayed Response and No Response conditions.
- (6) In the Delayed Response condition, the children would retell a greater percentage of the stories read than in the Correction, Word Supply and No Response conditions.

Limitations

The interpretation of results from this study are constrained by several limitations.

- (1) In order to control for the potential variables which the researcher might create through subjective decisions in selecting certain miscues for response, the researcher responded to every miscue except repetitions. Since the research design necessitated responding to every miscue, some of the error episodes may have been atypical of teacher-student interactions because teachers

are selective and do not respond to every miscue. Thus, the design may have oversimplified the question.

- (2) The proposed study measured the immediate impact of the teacher response on student performance and did not necessarily measure long range effects or predict how well a reader might read in the future. It could be argued, however, that the teacher response which helped students to read effectively and to use effective reading strategies should produce proficient readers.
- (3) Certain responses may be more effective if a particular response type is matched with certain kinds of miscues. For instance, not responding may be the worst way to react to low quality miscues which change or destroy the meaning, but these effects may be hidden by the effects of not responding to high quality miscues.
- (4) Generalizations from this study are not necessarily appropriate for other populations at a different level of proficiency.
- (5) Students may develop strategies for using and/or coping with different kinds of teacher responses. The design may have been ineffective if the subjects weren't familiar with the different responses and needed time to develop a familiarity with the response types.

Definition of Terms

- Context - The semantic and syntactic environment surrounding a portion of the text.
- Error Episode - An instance involving an oral reading error, the teacher's response to that error, and the reader's subsequent behavior in reacting to the error and/or the teacher's response.
- Grapho-phonetic Information - The visual and acoustic information associated with a printed word.
- High Quality Miscues - Oral reading errors which preserve the gist of a sentence despite the deviation from the expected response.
- Insertion - A word or group of words which the reader adds to the text.
- Low Quality Miscues - Oral reading errors which substantially disrupt the meaning of a sentence.
- Meaningful Miscues - Those miscues which produce syntactically or semantically acceptable sentences or parts of sentences.
- Miscue - An oral reading error. Any deviation from the text.
- Miscue Patterns - The repetition of relationships among the grapho-phonetic, syntactic, and semantic qualities of a reader's miscues and his reading behaviors.
- Reading Strategy - A plan of action that a reader uses to get to meaning.
- Regression - The movement of a reader's eye to an earlier portion of the text. This movement may be accompanied by vocalization.

Repetition - A portion of the text which the reader repeats orally.

Response - A teacher's instructional reaction to a miscue.

Retelling - The reader's narrative account of a story including his responses to questions.

Self-correction - The unassisted and unprompted correction of a miscue by a reader.

Substitution - A word or phrase which the reader exchanged for the expected word or phrase.

C H A P T E R I V

RESULTS

The results are organized according to the hypotheses listed in the previous chapter. The miscue data were analyzed to determine if there were significant differences between the four teacher response conditions in the average number of miscues, the syntactic and semantic acceptability of the miscues, and the correction of miscues. After the data for the entire sample are presented, the differential effects between the first and the second five hundred words of the sample for that dependent measure are presented. Following the miscue data, the findings from the comprehension data (retelling scores), the childrens' non-word substitutions, and their miscues on functors, helping verbs, articles and pronouns are described. These results were not analyzed for differential effects because there was not sufficient variation in the data to warrant analysis.

Average number of miscues. The first question addressed by the analysis is: Are there differences in the average number of miscues produced between the four teacher response conditions across the four stories? Those teacher responses which interrupted the reader in different ways produced significantly fewer miscues than the No Response condition in which there was no reaction by the researcher to a miscue. A MANOVA for the effect of type of teacher response indicates this difference in the average number of miscues between the No Response

and all other teacher response conditions is highly significant ($F(3,48) = 4.568, p < .0068$. See Table 3). The average number of miscues made under the No Response condition was 70, while the Word Supply, Correction, and Delayed Response conditions led to averages of 58, 59 and 61 miscues respectively (See Table 4).

The MANOVA also examined the possible effects due to the particular sequences of teacher response type that the children received. The analysis revealed that there were no effects on the number of miscues attributable to a particular ordering of the response types ($F(3,16) = 2.287, p < .118$). Table 4 presents a pair-wise comparison of the average number of miscues produced by the four teacher response conditions. Independent t-tests further confirm this result.

In addition, the MANOVA (Table 3) shows an effect for particular stories. Some stories appear to have produced more miscues than others ($F(3,48) = 13.297, p < .00001$); this finding was highly significant. Table 5 presents the differences between the four stories in the average number of miscues produced. The MANOVA determined that the children made more miscues on the second and fourth stories than they did on the first and third stories. This finding should not qualify the observed effects of the teacher response conditions however. Because data were collected for each response condition across all of the stories, the design counterbalanced any effects which might be caused by this finding.

As discussed earlier, there is a possibility that due to practice effects, a particular teacher response condition might have influenced

TABLE 3

Multivariate Analysis of Variance (MANOVA) for the Differences in the Numbers of Miscues Produced for the Type of Teacher Response and the Type of Story

<u>Variable</u>	Sum Of		Mean		<u>F</u>	<u>Significance</u>
	<u>Squares</u>	<u>Df.</u>	<u>Square</u>	<u>Square</u>		
Error	5950.8	48	123.98			
Teacher Response Type	1699.0	3	566.37	4.568	(.0068)	
Story Type	4945.6	3	1648.55	13.297	(.00001)	
Teacher Response By Story Type	1764.18	6	294.03	2.37	(.0436)	

TABLE 4
Differences Between Four Teacher Response Conditions In
Average Number of Miscues Produced

Comparisons of Teacher Response Condition	Comparisons of Average Number Of Miscues	t-value	Significance
No Response vs. Word Supply	70 vs. 58	-3.34	(.002)
No Response vs. Correction	70 vs. 59	-3.025	(.004)
No Response vs. Delayed Response	70 vs. 61	-2.399	(.02)
Word Supply vs. Correction	58 vs. 59	-.312	NS
Word Supply vs. Delayed Response	58 vs. 61	-.937	NS
Correction vs. Delayed Response	59 vs. 61	-.624	NS

TABLE 5

Differences Between the Four Stories in the

<u>Story</u>	<u>Average No.</u>		<u>t-value</u>	<u>Significance</u>
	<u>Miscues</u>			
Story 1 vs. Story 4	54 vs. 69		-4.161	(.0001)
Story 2 vs. Story 4	71 vs. 69		.479	NS
Story 3 vs. Story 4	54 vs. 69		-4.246	(.0001)
Story 2 vs. Story 1	71 vs. 54		-4.659	(.0001)
Story 2 vs. Story 3	71 vs. 54		4.743	(.0001)
Story 1 vs. Story 3	54 vs. 54		.085	NS

the children's miscue rates differently at the beginning of a reading session than at the end. In order to examine these potential effects, the average number of miscues produced during the first five hundred words of the sample and the second five hundred words were analyzed for each response type. The results of this analysis are presented in Table 6. For the first five hundred words, the Word Supply condition produced significantly fewer miscues than both the Delayed Response and the No Response conditions. A MANOVA for the effects of type of teacher response indicates that these differences were highly significant ($F(3,48) = 3.095, p < .0355$. See Table 7). During the second five hundred words of the sample, the No Response condition produced significantly more miscues than the other three response conditions. The MANOVA for the effects of teacher response during the second five hundred words also shows that the effects were significant ($F(3,48) = 4.641, p < .006$. See Table 7).

Quality of Miscues. The second question reviewed is: Are there significant differences in the quality of the miscues produced by the four teacher response conditions across the four stories? In order to answer this question, both the syntactic and the semantic acceptability of the miscues were analyzed. For the total sample, the percentages of syntactically acceptable miscues were: 80%, 88%, 78% and 76% for the No Response, Delayed Response, Correction and Word Supply conditions respectively. A MANOVA for the effects on the percentage of syntactically acceptable miscues by teacher response condition

TABLE 6

Differences Between the Four Teacher Response Conditions in the Average Number Of Miscues Produced During the First and Second Halves of Sample

Comparisons Of Teacher Response Type	First Half		Second Half			
	Comparisons Of Average Number of Miscues	t-value	Significance	Comparisons Of Average Number of Miscues	t-value	Significance
Word Supply vs. No Response	26 vs. 31	-2.635	(.01)	32 vs. 40	-2.74	(.009)
Correction vs. No Response	28 vs. 31	-1.405	NS	31 vs. 40	-3.078	(.003)
Delayed Response vs. No Response	31 vs. 31	-.100	NS	31 vs. 40	-3.237	(.002)
Word Supply vs. Correction	26 vs. 28	-1.230	NS	32 vs. 31	.338	NS
Word Supply vs. Delayed Response	26 vs. 31	-2.535	(.02)	32 vs. 31	.496	NS
Correction vs. Delayed Response	28 vs. 31	-1.305	NS	31 vs. 31	.159	NS

TABLE 7

Multivariate Analysis of Variance (MANOVA) for the Differences in the Effects of Type of Teacher Response and Type of Story on the Numbers of Miscues Produced During the First and the Second 500 Words of the Sample

Variable	First 500 Words				Second 500 Words				
	Sum of Squares	Mean Square	F	Significance	Sum of Squares	Df.	Mean Square	F	Significance
Error	1904.9	39.69			3043.3	48	63.40		
Story Type	1231.1	410.38	10.340	(.000002)	1400.4	3	466.80	7.363	(.00037)
Teacher Response Type	368.5	122.85	3.095	(.0355)	882.7	3	294.23	4.641	(.006)
Teacher Response Type by Story	721.1	120.20	3.028	(.0136)	393.6	6	65.60	1.035	NS

indicates that these differences were not significant using an F-test. T-tests for pair wise comparisons confirm that the differences between the conditions were not significant. (See Table 8). When the effects of teacher response on the percentage of syntactically acceptable miscues for the first five hundred words are analyzed however, the Word Supply produced a significantly lower percentage of syntactically acceptable miscues than both the Delayed Response and the No Response conditions. Table 9 presents a pair wise comparison for the effects of teacher response on syntactic acceptability during the first five hundred words. The variations among the four teacher response conditions were not significantly different for the second five hundred words.

A MANOVA for the effects of teacher response type on the percentages of semantically acceptable miscues indicates that there were no significant effects for the total sample or for the first and second five hundred words of the sample. The children produced miscues which were semantically acceptable 60%, 60%, 60% and 56% of the time for the No Response, Delayed Response, Correction and Word Supply conditions respectively. T-tests comparing isolated pairs of the response conditions also confirmed that there were no significant differences between these conditions' effects (See Table 10).

Correction behaviors. The next question addressed by the analysis investigated the difference in the childrens' correction behaviors across the four teacher response conditions. Although an F-test revealed that there were no significant differences in the percentages

TABLE 8

Differences Between Four Teacher Response Conditions in Percentages of
 Syntactically Acceptable Miscues Produced for the Total Sample

<u>Comparisons Of Teacher Response Conditions</u>	<u>Comparisons of Average Percentages of Syntacti- cally Acceptable Miscues</u>	<u>t-value</u>	<u>Significance</u>
No Response vs. Word Supply	80% vs. 76%	1.85	NS
No Response vs. Correction	80% vs. 77%	.91	NS
No Response vs. Delayed Response	80% vs. 88%	.69	NS
Word Supply vs. Correction	76% vs. 77%	.94	NS
Word Supply vs. Delayed Response	76% vs. 88%	1.16	NS
Correction vs. Delayed Response	77% vs. 88%	.22	NS

TABLE 9

Differences Between Four Teacher Response Conditions in the Percentages of Syntactically Acceptable Miscues Produced During the First Five Hundred Words

Comparisons Of Teacher Response Conditions	Comparisons of Average Percentages of Syntactically Acceptable Miscues	t-value	Significance
No Response vs. Word Supply	79% vs. 71%	2.52	(.01517)
No Response vs. Correction	79% vs. 77%	1.04	NS
No Response vs. Delayed Response	79% vs. 79%	.38	NS
Word Supply vs. Correction	71% vs. 77%	1.47	NS
Word Supply vs. Delayed Response	71% vs. 79%	2.14	(.05)
Correction vs. Delayed Response	77% vs. 79%	.67	NS

TABLE 10

Differences Between Four Teacher Response Conditions in the
Percentage of Semantically Acceptable Miscues Produced for the Total Sample

<u>Comparisons Of Teacher Response Conditions</u>	<u>Comparisons of Average Percentages of Semanti- cally Acceptable Miscues</u>		<u>t-value</u>	<u>Significance</u>
No Response vs. Word Supply	60%	vs. 56%	.69	NS
No Response vs. Correction	60%	vs. 60%	-.14	NS
No Response vs. Delayed Response	60%	vs. 60%	.25	NS
Word Supply vs. Correction	56%	vs. 60%	1.55	NS
Word Supply vs. Delayed Response	56%	vs. 60%	.44	NS
Correction vs. Delayed Response	60%	vs. 60%	-.38	NS

of the miscues that the readers attempted to correct for all of the response conditions, t-tests of differences between isolated pairs indicate that the differences between the Word Supply and the Delayed Response conditions were significant ($t = 2.12, p < .05$. See Table 11). For the total sample, the children attempted to correct themselves significantly more often in the Delayed Response condition (33%) than in the Word Supply condition (30%). During the first five hundred words, the children attempted to correct their miscues significantly more often in both the Delayed Response (35%) and the Correction (36%) condition than in the Word Supply condition (31%) ($t = -2.55, p < .05$. See Table 11). There were no significant differences in the students' correction behaviors during the second five hundred words.

When the percentages of semantically unacceptable miscues that the children attempted to correct in each teacher response condition were compared, the differences were not significant because of the amount of variation around each mean. However, the children corrected themselves less often in the Word Supply condition (24%) than they did in the Delayed Response, No Response, and Correction conditions (29%, 30% and 31% respectively). This finding is consistent with the correction patterns for all of the miscues.

High frequency words and non-word substitutions. The next two questions examined the kinds of words which elicited miscues and whether the miscue was a real word or a non-word. Only very minor differences between the four teacher response conditions were found in the

TABLE 11

Differences Between Four Teacher Response Conditions in the Percentages of Miscues that the Reader Spontaneously Attempted to Correct During the Total Sample and During the First 500 Words of the Sample

Comparisons of Teacher Response Conditions	Total Sample		First 500 Words			
	Percentages Of Miscues	t-value	Significance	Percentages Of Miscues	t-value	Significance
Word Supply vs. No Response	30% vs. 33%	-1.77	NS	31% vs. 36%	-1.63	NS
Correction vs. No Response	32% vs. 33%	.14	NS	36% vs. 36%	.62	NS
Delayed Response vs. No Response	33% vs. 33%	.35	NS	35% vs. 36%	.14	NS
Word Supply vs. Correction	30% vs. 32%	-1.91	NS	31% vs. 36%	-2.25	.05
Word Supply vs. Delayed Response	30% vs. 33%	2.12	.05	31% vs. 35%	-2.55	.05
Correction vs. Delayed Response	32% vs. 33%	-.21	NS	36% vs. 35%	.48	NS

percentages of miscues caused by functors, helping verbs, articles and pronouns. These short high frequency words produced miscues 48%, 46%, 46% and 48% of the time respectively for the No Response, Delayed Response, Correction and Word Supply conditions. Comparisons of the percentages of non-word substitutions across the four teacher response conditions were also insufficiently different to warrant analysis for differential effects. The children produced non-word substitutions for the expected responses 17%, 17%, 19% and 17% of the time respectively for the No Response, Delayed Response, Correction and Word Supply conditions.

Retelling scores. The final question considered is: Are there differences in the childrens' comprehension because of some influence from the four teacher response conditions? The childrens' comprehension and recall of information, measured by retelling scores, was consistently high across the four teacher response conditions for all of the stories. Because there was little variation among the raw scores, the differences were not analyzed for statistical significance but will be described instead (See Table 12). Although there was little difference in the percentages of information recalled under the teacher conditions for the four stories, differences were found when the stories were grouped according to the two stories which produced more miscues and those which produced fewer miscues. The percentage of information recalled from stories read under the Delayed Response condition remained almost identical for the four stories

TABLE 12

Differences in Comprehension Measured by the Percentages of
 Information Recalled During a Retelling for Four Teacher Response Conditions

<u>Teacher Response Conditions</u>	<u>All Four Stories</u>	<u>The Two Stories Which Produced Fewer Miscues</u>	<u>The Two Stories Which Produced More Miscues</u>
No Response	83%	86%	79%
Delayed Response	84%	85%	84%
Correction	83%	86%	80%
Word Supply	80%	85%	74%

compared with the percentage for stories with more miscues and the percentage for those stories with fewer miscues. When children read during the Delayed Response condition, unlike the other three response conditions, subjects recalled almost the same percentage of information from the stories which produced more miscues as they did from the stories which produced fewer miscues (refer back to Table 5 for the differences between the four stories in the number of miscues produced). Thus the Delayed Response condition improved the subject's comprehension of the stories which produced more miscues eliminating the effects of "easy" and "hard" stories which were apparent under the other response conditions. It should also be noted that the percentage of information retold from stories read under the Word Supply condition was less than under the other conditions, especially for the "harder" stories.

To put these results in perspective, it is important to point out that the researcher interrupted the children substantially less often in the Delayed Response condition than he did in the Word Supply and Correction conditions. Because only 40% of the miscues produced under the Delayed Response condition resulted in anomalous sentences and because some of the miscues were spontaneously corrected by the children or occurred in a sentence with one or more other miscues, the researcher averaged only eighteen (18) responses per story. Therefore the researcher responded slightly less than once for every three miscues produced compared with an average of approximately twice for every three miscues during the Word Supply

and Correction conditions. There were of course no interruptions by the researcher during the No Response condition.

Summary of the results. The results can be summarized as finding that the four teacher response conditions had significant effects on the numbers of miscues produced and the readers' correction behaviors. During the first five hundred words, there were also significant differences in the percentages of syntactically acceptable miscues. For the total sample however, there were no significant differences in the percentages of syntactically or semantically acceptable miscues, the percentage of miscues on short high frequency words or the percentage of non-word substitutions for the four teacher response conditions. Although the differences were not significant, there was some variation in the amount of information retold by the children especially for the stories which elicited more miscues depending upon the teacher response condition. Thus the teacher responses influenced the number of miscues made, comprehension and what a child did after he made a miscue but tended not to influence the other dependent variables which examined the quality of miscues and what might have caused them.

The No Response condition led to significantly larger average numbers of miscues than all of the other teacher responses did (No Response-70, Delayed Response-61, Correction-59, Word Supply-58). These differences were especially strong during the second five hundred words. The other significant difference was produced during

the first five hundred words where the No Response condition had a significantly higher percentage of syntactically acceptable miscues (79%) than the Word Supply condition (71%). Despite the larger number of miscues, there was very little variation in the results for the other dependent measures.

The Delayed Response condition was significantly different from the Word Supply condition during the first five hundred words. Although the Delayed Response produced significantly more miscues (31 vs. 26), a higher percentage of those miscues were syntactically acceptable (79% vs. 71%). Furthermore a greater percentage of miscues were corrected in the Delayed Response (33% vs. 30%) than in the Word Supply condition. For the total sample, the significant differences between the Word Supply and the Delayed Response persisted only in the percentages of miscues that the readers attempted to correct (35% vs. 31%). The Delayed Response condition did not produce effects which were significantly different from the No Response and the Correction condition or for the remaining variables except the retelling scores. While the percentages of information retold were close across the four conditions, subjects in the Delayed Response condition recalled as much information from the "hard" stories as they did from the "easy" stories (See Table 12). Thus the Delayed Response not only produced good comprehension but tended to facilitate the comprehension of the stories which produced more miscues.

The Correction response was significantly different from the other responses in only two ways. In the Correction response condition, the

children produced significantly fewer miscues than they did in the No Response condition for both the total sample (59 vs. 70) and for the second five hundred words (31 vs. 40). During the first five hundred words, the readers also corrected a higher percentage of their miscues than they did in the Word Supply condition (31% vs. 26%).

In the Word Supply response condition, the children averaged significantly fewer miscues than they did in the No Response condition for the total sample (58% vs. 70%). The children also produced significantly fewer miscues in the Word Supply (26) than in both the No Response (31) and the Delayed Response (31) conditions during the first five hundred words. The percentages of syntactically acceptable miscues during the first five hundred words were less in the Word Supply condition (71%) however, than in the No Response (79%) and Delayed Response (79%) conditions. The readers also attempted to correct a significantly smaller percentage of their miscues in the Word Supply condition (30%) than in the Delayed Response condition (33%) during the total sample. And during the first five hundred words, the readers corrected a significantly smaller percentage of their miscues (31%) than they did in both the Delayed Response (35%) and the Correction (36%) conditions.

During the next chapter, these results will be discussed with a particular interest in how teachers can influence children to read more effectively. Using the differences in the focus, amount of interference, and responsibility among the four teacher response conditions to interpret the results, the role of the teacher and the

efficacy of oral reading instruction will be examined. In addition to the implications for instruction, the next chapter will also consider further research in this area.

C H A P T E R V
DISCUSSION AND IMPLICATIONS

Preliminary Comments and Considerations

The research reviewed earlier indicates that teachers respond in different ways to miscues and that very little is known about how different responses affect reading behavior. This study examined the effects of repeated exposure to four teacher responses in a controlled setting. In interpreting the results, the focus, the responsibility, and the amount of interference involved in an error episode are useful themes for analyzing the data and for speculating about reading instruction, reading behavior and further research. A teacher's response to a miscue may "focus" a reader by emphasizing certain aspects of reading as important or by suggesting certain behaviors. In addition, a response type, by definition, determines the degree which the reader or the teacher takes "responsibility" for maintaining the focus. The response types also "interfere" with the reader in varying degrees.

In the Correction and the Word Supply responses, the teacher initiates a response every time the reader does not accurately reproduce the sequence of words in the text. The teacher's actions, therefore focus the reader on naming words accurately. The reader has no responsibility for maintaining the focus on words because each miscue is automatically corrected by the teacher. Depending upon the number

of miscues and the quality of miscues, the Correction and Word Supply responses may substantially interfere with the reader. In the Delayed Response however, the reader is focused on meaning because the teacher responds when sentences don't make sense and ignores miscues which produce meaningful sentences. The timing of the Delayed Response gives the reader more of a chance to change anomalous sentences thus sharing the responsibility for maintaining the focus between the teacher and the reader. Teachers using the Delayed Response do not interfere with the reader each time a miscue is made. By definition, the No Response does not interfere with the reader at all. The reader also has all of the responsibility for determining and maintaining the focus of his reading.

These themes, the focus, who takes responsibility, and the amount of interference, will be used, when appropriate, to interpret the results and make projections about the potential costs and benefits involved. In addition, the No Response condition will be used as a baseline to establish a perspective on the results. From this reference point using the three themes, the effects of the four teacher response conditions on each variable will be discussed simultaneously starting with the strongest finding first. When informative, the results from the other variables will be used to help put the results for a particular variable in perspective. However, several parameters for this study must be mentioned before the results are discussed.

Within the constraints of the procedures, the experiment approximated children's instructional oral reading experiences. The miscues

and the behaviors by the subjects were not atypical of readers at this ability level. The differences between subjects and groups of subjects or between the stories were not unexpected. No two readers are the same and no two stories are the same. For the purposes of comparing the effects of the response conditions to classroom situations however, the differences between the stories and the subjects are well within the range of variation that might be expected. Therefore, it is appropriate that the results and generalizations from the study be applied to instruction as well as to future research on this topic.

In interpreting the data, it is important to remember that the study involved four brief samplings of the effects of the four teacher response conditions with only twenty children. Studying readers at other levels of proficiency or a larger number of readers might have produced different results. If the results had been based on more extensive exposure to the four teacher response conditions, the results might also differ from those found by this study. Research cited earlier (Barr, 1972; Mitchell, 1980) indicates that readers eventually adopt the reading behaviors promoted by various instructional procedures. Because the subjects were familiar with the No Response, Correction and Word Supply responses, however, it is unlikely that additional exposure to those response types would significantly change the results. But it is possible and likely that more extensive exposure to the Delayed Response, in particular, could produce more pronounced differences in the areas found because the readers were unfamiliar with the Delayed Response condition.

The children were also exposed to the same response repeatedly for every miscue despite differences in the quality or type of the miscue. According to other studies (Roberts, 1973), consistency and the repetition of a single response is not the standard practice within classrooms. This may have had some effect due to its novelty, especially in the No Response condition.

Accuracy

The No Response condition produced one of the study's strongest results (See Tables 4 and 6). Children made significantly more miscues in the No Response condition than they did in the Correction, Word Supply and Delayed Response conditions. Thus, it appears that interrupting children helps to make them more accurate oral readers. It is interesting to note, however, that although students were interrupted in the Delayed Response only half as frequently as they were in the Correction and Word Supply conditions, the three conditions produced very nearly the same average number of miscues. It is also interesting that students produced the same number of miscues during the first and second halves of the sample in the Delayed Response condition. In the other response conditions, students produced more miscues during the second five hundred words.

These results may indicate that if teachers respond to children's oral reading errors in a way that focuses the children on meaning, as the Delayed Response condition did, then children will read as

accurately if not more accurately than they would in a word focused response, such as the Correction or Word Supply conditions. The results also show that this accuracy is achieved with much less interruption by the teacher. This raises the factor of efficiency in teacher response types. Perhaps the Delayed Response is more desirable because children require less interruption by the teacher to produce the same degree of accuracy.

In the Delayed Response condition, the responsibility for monitoring the reading is shared by both the student and by the teacher. The teacher, in addition to determining a focus on meaning, serves as a back-up system to help the reader recognize when he has produced an anomalous sentence. In the Correction and Word Supply conditions, the student does not have any responsibility for monitoring the reading as opposed to the No Response condition in which the reader has all of the responsibility. The results indicate that when everything (the focus and the responsibility) is left up to the child, that children will make more miscues. The results also indicate however, that when the responsibility is shared by both the teacher and the student and when the focus is on meaning, it takes fewer interruptions for teachers to affect the numbers of miscues produced at levels equivalent to the word focused responses in which the teacher takes all of the responsibility.

Teachers need to be clear about their purpose in having a child read aloud. If the purpose is instructional, rather than to see how well a child can read, then they need to do something that helps the

reader or decide to have the child read silently. Responding to a reader's miscues in a way that both maintains a focus on meaning and shares the responsibility with the reader is an efficient way to produce fewer miscues. Producing fewer miscues, however, may or may not be a desirable goal for reading instruction. The quality of the miscues, as well as the readers' comprehension and correctional behaviors, need to be examined to determine if the larger numbers of miscues produced by the No Response condition are undesirable or if the different response types have additional effects on children's reading.

Quality of Miscues

The quality of a reader's miscues was measured by determining the syntactic and semantic acceptability of a sentence up to and including the miscue. For the total sample, the percentage of semantically and syntactically acceptable miscues was consistently high across all of the response conditions (See Tables 8, 9 and 10). The Word Supply condition however, produced smaller percentages of syntactically acceptable miscues than both the No Response and the Delayed Response conditions. These percentages were significantly smaller only during the first five hundred words of the sample. In the Delayed Response condition, however, readers produced a higher percentage of syntactically acceptable miscues for the total sample than they did for the first five hundred words. This indicates

that their reading improved as they read further. Although these percentages were not significantly better, with a larger sample or if the readers were familiar with the Delayed Response condition, they might have been.

In discussing the quality of the miscues, the nature of the miscues is useful for reaching a conclusion about which response is the most desirable. As might be expected because of their abundance, short, high frequency words consistently led to approximately 50% of the miscues across the four response types. The readers also produced nearly identical percentages of non-word substitutions (17-19%) for the four response conditions. Given the high proportion of miscues on words which were familiar to the readers and which were probably responded to accurately elsewhere, the Correction and Word Supply responses seem inappropriate, especially since such a high percentage of the miscues produced meaningful sentences.

Children do not need to be told what a particular word is or asked to figure something out when they already know that word. Immediately responding to miscues on short, high frequency words often interrupts and interferes with the reader and may serve only to produce an accurate oral reproduction of the sentence. Furthermore, the responses which focused on words did not make students more accurate on short, high frequency words, as might be expected. Instead the word focused responses were beginning to elicit more miscues as the children read further. Because the readers were producing semantically acceptable miscues 60% of the time and because half of the miscues were related

to words known to the readers, responding to every miscue was perhaps unwarranted. The Delayed Response may be the most desirable and efficient response because teachers respond only when the meaning is lost and don't interrupt the reader when a miscue is inconsequential.

The trend for the Delayed Response to produce more high quality miscues might have been significantly different from all the other response conditions for the entire sample if the sample size had been larger. Perhaps because of its focus on meaning, much less teacher interruption was needed in the Delayed Response condition to influence children to produce meaningful reconstructions of the text more frequently. Therefore, because of its efficiency in producing desirable effects and because of the nature of many of the words causing miscues, the Delayed Response is more appropriate than the other response conditions in regard to the quality of miscues.

Correction Behaviors

Because of the Delayed Response's effects on the quality of miscues produced, it was somewhat surprising that the Delayed Response was not clearly more effective in producing higher percentages of attempted corrections (See Table 11). While there were significant differences in percentages of miscues spontaneously corrected when both the Delayed Response and the Correction conditions were compared with the Word Supply condition, the Delayed Response, Correction, and No Response conditions were not significantly different. However,

if the higher percentages of high quality miscues are considered when the percentages of miscues corrected are interpreted, the Delayed Response condition was more effective at influencing the readers to correct themselves more often.

Although in the Delayed Response condition there were smaller percentages of low quality miscues (especially syntactically unacceptable miscues) than there were in the Word Supply condition, the readers corrected themselves significantly more often in the Delayed Response condition. The Correction response also produced a significantly higher percentage of corrections than the Word Supply. But its superiority lasted only for the first five hundred words and not for the total sample as well, like the Delayed Response's did. When the effects of the Delayed Response are compared with the effects of the Correction and No Response condition, it is apparent that the Delayed Response was more effective if the changes in the quality of the miscues are considered along with changes in the percentages of miscues corrected over the total sample. In the Delayed Response condition, the quality of miscues improved in terms of syntactic acceptability while the readers continued to correct almost the same high percentage of their miscues. In the No Response and Correction conditions, the quality of the miscues was static yet the percentages of miscues corrected declined slightly. Thus in the Delayed Response, the percentage of miscues corrected decreased less than in the Correction and the No Response conditions even though there was increasingly less unacceptability signaling the reader to correct. These findings confirm

in part the hypothesis that the Delayed Response condition, through its focus, would make children more sensitive to the meaning and would encourage them to take more responsibility by making more corrections.

Comprehension

The final factor in discussing the results of this study is interpreting the effects of the four teacher response conditions on the amount of information retold by the children (See Table 12). Unfortunately it is very difficult to measure reading comprehension, and the retellings reflected that difficulty. Because student retellings were so consistently good, significant differences among the four teacher response conditions could not be found. Perhaps a source of data which is more precise and easily quantifiable might have produced significant differences. However, differences in the retelling scores were found which indicate that the children recalled as much information from the stories which caused more miscues as from the stories which caused fewer miscues if the teacher responded using the Delayed Response condition. In spite of the greater number of miscues, not only did the readers recall more of the "difficult" stories, but they also recalled the same percentage from the "difficult" stories as they did from the "easy" stories. Thus the Delayed Response condition, perhaps because of its focus on meaning and/or because it encouraged the students to take some responsibility for maintaining that focus, worked to neutralize the difficulties children encountered

in comprehending the more "difficult" stories. However, in the Word Supply, Correction and No Response conditions the children recalled less information from the stories which caused more miscues than they did from the "easy" stories.

Instructional Implications

Based on these results, the Delayed Response is probably the most effective teacher response for helping children read well. The benefits in comprehension, corrections, quality of miscues, and accuracy were gained at very little cost. In the Delayed Response condition, the children were interrupted about eighteen times per story. This rate was substantially less than the average of forty interruptions for the Word Supply and Correction conditions. Comparisons between the initial five hundred words and the final five hundred words indicate that the quality of the children's reading in the Delayed Response condition was improving or remaining the same. In the other teacher response conditions, the quality of the children's reading was static or declined. The trend for the reading to improve in the Delayed Response could be expected to continue and quite possibly produce more significant differences because the students were developing familiarity with that particular teacher response.

Because of the timing of the Delayed Response, there is little lost in the opportunity for readers to develop their independence and confidence. Children can learn to use contextual information, and

they have a chance to make mistakes and then correct themselves in order to learn and practice self-correction behaviors. But there is the added advantage of the teacher working as a safeguard, making students aware when they have lost the meaning, or making it clear that a sentence is anomalous in situations where the reader may not be certain.

It could be argued that the No Response condition is the most desirable because the readers were on their own, reading independently without any substantial costs or differences in their performance except that they made more miscues. However, the role of the teacher and the purpose of reading aloud is then questionable. Except for diagnostic purposes, there is no instructional benefit or purpose in listening to a child read without responding that could not be accomplished through silent reading. The quality of the children's performance in the No Response condition, therefore, is strong support in favor of independent, silent reading. Readers need to develop confidence and independence from the teacher by practicing on their own. And teachers can feel comfortable that readers at this level can read independently without substantial costs to the quality of their reading. Silent reading is certainly a more efficient approach for the teacher than listening without responding to miscues. However, if a teacher is going to listen to the child read, he should help the child develop appropriate and useful reading behaviors.

The study was not intended to be a naturalistic study, and the constant repetition of a single response condition for an entire sample

may have created an artificial reading experience. The research cited earlier found that teachers use a variety of responses including not responding at all when children make miscues. It makes sense that teachers would be more effective at responding to what a child is trying to do if they used a variety of responses depending upon the circumstances involved with each miscue.

Sometimes a student may make a miscue or skip over a troublesome part of the text and keep on going. Responding to the student's miscue at that point would interrupt what the reader is trying to do and deny him a chance to, if necessary, solve the difficulty. In these kinds of error episodes, the Delayed Response strategy is likely to be particularly effective. If however, the reader stops at a particular word or returns to a particular area, the reader probably knows that he is not making sense of the text. In this situation, the Word Supply condition would probably be effective particularly if a word is unfamiliar to the reader and/or difficult to figure out.

Perhaps the Word Supply and Delayed Response conditions can be combined for instances when a reader is stuck by asking the reader if a particular word "would fit here." In order to make a decision, readers would have to know what the sentence meant. This new response type would get the reader going again but would also maintain a focus on meaning as well as give the student some responsibility. By using a combination of the Delayed Response and the modified Word Supply conditions, teachers are likely to be able to respond to different situations in ways which help the reader do what he is trying to do

This study also found that approximately half of the words involved in the error episodes were short, high frequency words. The students were probably very familiar with these words and could easily identify them accurately if they were trying to. Although miscues involving short high frequency words sometimes result in sentences which are anomalous to the teacher listening, the readers may have understood the messages. Eye movement studies have found that readers often jump over short words. Perhaps the subjects were silently correcting themselves or at some level, inferring the appropriate response as they tried to construct the meaning. The response conditions, with the exception of the No Response condition, required that the researcher respond to many if not all the miscues of this kind. A few students were irritated by the teacher's responses to these miscues and said: "I know," "So what," or "Big deal." Perhaps teachers should overlook this kind of miscue because it is so difficult to tell what a student is thinking.

Another problem teachers face in responding to a child's reading is the difficulty in telling if what the reader has said makes sense to him. Occasionally a student may pronounce a word correctly but may not have understood what it meant. For instance, some readers stopped and asked what a particular word meant after pronouncing it correctly. Other readers may have kept reading. Teachers can sometimes tell from a child's intonation or the expression on his face that he doesn't understand what he is reading. But if teachers use the Delayed Response condition, children should learn to monitor the meaning themselves and when appropriate, to self correct or seek help.

The Delayed Response would not only be helpful in this situation, but it would also help students learn useful strategies for when they are reading independently and don't understand the text.

The goal of reading is to help readers learn to construct meaning from printed materials efficiently and independently. The results of this study indicate that the Delayed Response is an effective way for teachers to respond to miscues in order to help develop readers' proficiency during oral reading instruction. The Delayed Response encourages students to read for meaning by putting the focus or purpose for reading in the appropriate place. It also encourages efficiency in reading because it trains readers to react when the meaning is lost, and to proceed when things make sense. Thus, it sensitizes them to respond when a miscue makes a difference but not to worry about high quality miscues which do not disrupt the meaning. It also provides an appropriate as well as productive way for teachers to help their students. Teachers have a criterion to use which helps them choose to respond when a specific set of circumstances are present. This same criterion is also appropriate for students to learn to use in making decisions about proceeding or regressing for clarification. Both the reader and the teacher share the responsibility for monitoring the process. Because the response also serves to limit the teacher's intervention to only some of the miscues, students have a chance to develop independence and confidence as readers. They also have a chance to learn from their miscues. The timing of the Delayed Response may be very important; by waiting

until the end of the sentence, students have time to notice that the sentence is anomalous and correct themselves before the teacher intervenes. Because the students have time to figure things out on their own before being corrected, they are not likely to become overly cautious about avoiding miscues and being totally accurate. Instead, they might take chances and keep reading using contextual information as well as grapho-phonetic information. Developing skills in recognizing when the meaning is lost and how to find it again are particularly important for becoming independent as a reader, and the Delayed Response provides a structure in which students can learn and practice that skill.

Future Research

The results of this study show the need for more research in this area. In particular, the effects of the Delayed Response condition on readers who are familiar with that response type need to be researched. The effects of responding to miscues using the Delayed Response over a period of time should also be studied. Both of these studies are needed to determine if the trends and effects of the Delayed Response condition found by this study would become stronger.

Several questions in addition to the Delayed Response's long range effects and its effects on readers familiar with it are also raised by this study. Are good and poor readers affected differently

by the different response conditions? What response is most appropriate for beginning readers who are having difficulty reading fluently? Are certain combinations of the response conditions more appropriate depending upon the differences involved in each error episode? What other ways can teachers respond to a child's reading behavior and what are the effects of these new response types? These questions suggest several follow up studies to help clarify and understand the effects found and to explore the appropriateness of applying this study's conclusions to other populations.

But in addition to helping improve instruction, the results are also important because they indicate that teacher responses could be one of the elements in the "teacher variable" of successful reading instruction. Until now, the "teacher variable" has been a mystifying and elusive factor affecting the success children have at learning to read. Research on the effects of teacher responses to miscues shows promise for becoming a new field of inquiry in reading and for helping to understand the "teacher variable." The results of research in this area may lead to substantial changes in the ways teachers respond to miscues with significant effects on the success of reading instruction.

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APPENDIX A

Transcripts From Each Story With the Error
Episodes Marked for the Four
Teacher Response Conditions

DELAYED RESPONSE

Story #1

The Cat and the Fiddler

(X) One morning a fiddler walked through ^{the} town with his cat trailing
as at his heels. ^{DR} Shopkeepers were beginning to open their shops. ^E ~~house~~ waves house-

wives were sweeping their front steps. The milkman with his cart was
^{SC} just finishing his rounds. ^{DR} "Pardon me," said the fiddler to the ^E ~~prayer~~ prouder

milkman. "I am a stranger in town. Could you tell me where I
might have breakfast?"

The milkman smiled and reached down to pat the fiddler's cat.

"Why of course," he replied. "There is a fine place just down the
street. By the way, this looks like such a fine cat. Perhaps you
would sell her to me."

"Oh, I wouldn't think of selling her," replied the fiddler. "She
is a very special cat."

"I would take good care of her," said the milkman. ^{fin} "She could catch
the mice on the milkcart, and I would feed her the finest of cream." ^{DR}

"No," smiled the fiddler. "I could not part with her. Watch."

With that he picked up his fiddle, tucked it under his chin, and

began to play a jig. Suddenly the cat started to dance. First

she danced on her hind paws; then she danced on her front paws. She

whirled around and around, bouncing gracefully to the tune the fiddler

played

Finally, the fiddler stopped. "As you can see," he said, "she

is a very special cat."

By this time many people had gathered to hear the fiddler

play and to watch the cat dance. Now they began to applaud and

cheer.

"A dancing cat is indeed special," said a man from the carnival.

"Such a fine cat should not be sold just to hunt mice. Perhaps you would sell her to me. She could perform in my carnival."

The fiddler shook his head. "Oh, no," he replied. "I do not intend to sell her at all. I could not part with such a special cat." And with that he put his fiddle away and walked on down the

tucked tucked twin

DR

SC
whirled

DR
played

DR

fiddle
applaud

DR

TC
carnival
clever
clever

DR

hurt

CORRECTION CONDITION

Story #2

Dragon Stew

Once upon a time there was a kingdom ruled by a king who was so fat that his people called him King Chubby. He was so fond of food that he couldn't bear to be without it for very long.

Eating was his hobby. He began with a big breakfast at eight o'clock, had a light snack at ten, and a large lunch at twelve. Then he exercised by watching two tennis players, and since exercise made him hungry, he ate a small snack at about two in the afternoon.

At four, he had sandwiches and at seven in the evening he happily sat down to a royal banquet. There was one of these every evening, even if the king was the only one at the table.

Eating was so important to him that it affected everything he did. When he fell in love with a duchess from another kingdom, he told her that he would almost rather look at her than eat a whole roast pig. Needless to say, the duchess never spoke to him again.

increased

TC
he

ever
extra - -
exercise

Sunday
Sun -
Stew

it
Dutch

* after -

* waitin' going to roads
after

His ^{to}love of ^{to}eating also got him in trouble in other ways. He was always losing his royal cooks. He just couldn't keep from

to present
to lose
to lose

up

to

to telling them how to improve their cooking. He insisted on making

changes
changes
changes

size

proud

changes in every dish. Since royal cooks are very proud, they

resented this. Six cooks had already left the job.

what would?

One evening when the king entered the banquet hall and saw a sandwich on his plate, he knew what had happened.

"Oh, my," he sighed. "I see number seven has left!"

"Yes, your Majesty," replied one of the servants, "he said he could no longer cook for a king who kept changing all the recipes.

And now there are no more royal cooks left! None of those you've had will ever come back, and all the others are cooking for other kings.

I don't know how to find another cook. There just aren't any!"

The king looked worried for a moment, then brightened. "I know!"

A royal cook is a royal cook because he can make up unusual recipes.

We'll have a contest, and the one who tells me the most unusual recipe

can be the cook!"

while will

un-us-a-royal
unite

So Sheidulla decided to ^{play} pay a visit to the wise man and ask him
 to rid himself of poverty.

^{AC} begged
^{TC} about

He bade his wife and children good-by and set off on the

journey. He walked—a day, two days, three days—and then he met a

^{TC} stubborn
 lean, starved wolf.

"Where are you going, good man?" asked the wolf.

"I am going to the wise man. Perhaps he will tell me how to
 get rich."

When he heard this, the wolf said to Sheidulla, "Do me a favor.

Find out from the wise man what I can do. For three years now I've
 had a terrible stomachache, and I can't get rid of it. Perhaps he
 will tell you of a cure for my pain."

"Very well," said Sheidulla. "I'll ask him." And he went on.

Again he walked three days and three nights, until he came to an
 apple tree by the roadside.

"Where are you going, good man?" asked the apple tree.

"I am going to the wise man to find out how to get rich without
 working."

NO RESPONSE

Story #4

The Emperor and the Kite

Once in ancient ^{emperor} China ^{child} there lived a princess who was the fourth /
^{daughter} daughter of the emperor. She was very tiny. In fact she was so tiny
 her name was Djeow Seow, which means "the smallest one." ^{became} And, because
 she was so tiny, she was not thought very much of - when she was
 thought of at all.

Her brothers, who were all older and bigger and stronger than
 she, were thought of all the time. And they were like four ^{the} rising
^{rushing} ^{resian}
 suns in the eyes of their father. They helped the emperor rule the
 kingdom and teach the people the ways of ^{peace} peace.

Even her ^{three} three sisters were all older and bigger and stronger
 than she. They were like three midnight moons in the eyes of their
 father. They were the ones who brought food to his table.

But Djeow Seow was like a tiny star in the emperor's sight.
 She was not even allowed to bring a grain of rice to the meal, ^{so} so

little ^(C) was she thought of. In fact she was so insignificant ^(C)
 the emperor ^(C) often forgot he had a fourth daughter at all. And so,

uc
 invisible
 insignificant
 insig-

I've *the*
 the *daughter*

Djeow Seow ate by herself. And she talked to herself. And she played
 by herself, which ^(C) was the loneliest thing of all.

witch *lonest things*

Her favorite toy was a kite of paper and sticks. Every morning,

when the wind came from the east past the rising sun, she flew her

kite. And every evening, ^(C) when the wind went to the west past the
^(C) setting sun, she flew her kite. Her toy was like a flower in the sky.

toys were

And it was like a ^{problem} poem in the wind.

In fact a monk who passed the ^{the} palace daily made up a poem about ^{place decided} ^{problem}

her kite.

My kite sails upward,

A mudding
 Mounting to the high heavens.

My soul goes on wings.

Prince ^{thinks} a ^{problem}
 Princess Djeow Seow thanked him for his poem. Then she went back to

fly
 flying her toy.

perfect
 But all was not peaceful in the kingdom, just as the wind is not

APPENDIX B

Comprehension Outlines for
Judging the Retellings

The Cat and the Fiddler

Fiddler milkman, man from carnival

Cat townspeople, musicians

King ladies and gentlemen

1. Fiddler comes to town and plays music for people who watch while the cat dances.
2. Cat is very special and fiddler won't sell him to anyone.
3. Fiddler and the cat go to the palace to play for the King.
4. King takes the cat away from the Fiddler when the Fiddler won't sell him.
5. The musicians play, the cat starts dancing and everyone joins the dance.
6. Cat won't stop dancing and no one else can stop either.
7. King tells the Fiddler that he can have his cat back if he can stop the dancing.
8. Fiddler stops the dancing cat and they leave together.

Dragon Stew

King Chubby other cooks, guards

Klaus

Dragon

1. King Chubby is trying to find a new cook to replace the one who quit.
2. Klaus comes along and gets to be the cook by telling the King that he has the best recipe, dragon stew.
3. Klaus gets King to show him how to cook dinner.
4. King has guards capture a dragon for dragon stew.
5. Klaus doesn't know how to make dragon stew and doesn't want to kill the dragon.
6. Klaus served the King stew made from beef but cooked by the dragon.
7. King Chubby liked the stew and everyone was happy.

Sheidulla

Sheidulla

Sheidulla's family

Wolf

Apple Tree

Fish

Wise man

1. Sheidulla is a lazy man, goes on a journey to find out how to get rich from the wise man.
2. Sheidulla meets a wolf with a stomachache who wants Sheidulla to find out the cure.
3. Sheidulla meets an apple tree who wants to know why he can't have any apples.
4. Sheidulla meets a fish who wants a cure for his sore throat.
5. Sheidulla finds the wise man who tells him the solutions and says that Sheidulla's problems are solved also.
6. Sheidulla tells fish about the diamond stuck in his throat but doesn't bother to pull it out.
7. Sheidulla tells the apple tree about the pot of gold buried under its roots but doesn't bother to dig it out.

8. Sheidulla tells the wolf to swallow the first lazy man he meets.
9. Wolf questions him about his journey and then eats him because he is such a lazy man.

The Emperor and the Kite

Emperor brothers and sisters, monk, people

Princess

Evil Men

1. Princess is very tiny and everyone forgets about her.
2. Evil men take Emperor away, put him in the tower and tell everyone that he is dead.
3. The Princess saw what happened, brings food to him in the tower and flies it up to him with kite.
4. Princess weaves rope.
5. Princess uses her kite to fly the rope up to him.
6. Emperor escapes by sliding down the rope.
7. Emperor now loves his daughter and they rule the kingdom together, everyone is happy.

