

The Influence of Sustaining Feedback on the
Oral Reading Performance of Low Ability Readers

by

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Dedication

This manuscript is dedicated to and , my nephews, with the hope that it will serve as an inspiration for them in their future education.

Acknowledgement

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CHAPTER I

INTRODUCTION

Oral reading is a classroom activity in most primary reading programs and teacher feedback is often a part of this activity. According to Anderson and Brophy (1976), terminal and sustaining feedback are two forms of teacher feedback behavior that occur. Terminal feedback involves the teacher supplying the correct word to the reader. Sustaining feedback occurs when the teacher's prompt directs the reader to correct the miscue by examining such cues as initial letters, word parts or contextual meaning.

There is evidence (e.g., Hoffman & Kugle, 1981). that teachers use different feedback strategies with high ability readers than with low ability readers. Further, these various feedback strategies seem to affect the oral reading performance of these students. Of the existing studies investigating teacher feedback behaviors some have observed that low ability readers seem to receive more graphophonemic (letter sound) type feedback as compared to contextual feedback (e.g., Hoffman & Kugle, 1981). Others have found that it is more likely for teachers to interrupt poor readers who miscue when reading than good readers (e.g., Allington, 1980, 1982; Hoffman & Clements, 1981).

Another group of studies (Pehrsson, 1974; Niles, Graham, and Winstead, 1977; Pany, McCoy, & Peters, 1981; Niles, 1979) has found that type and timing affect the reading performance of students differently. For example, when comparing no-teacher feedback to sustaining graphophonic feedback, Niles, et al., (1977) reported significantly higher scores for an uninterrupted group of readers on their retelling (comprehension) and on miscues (word recognition) which resulted in no meaning change. On the other hand, the group receiving sustaining graphophonic feedback produced miscues which were highly similar to the text graphically (graphic similarity).

Teacher feedback during oral reading has been shown to affect various student behaviors, such as word recognition errors or miscues (e.g., Niles, et al., 1977), self-corrections (e.g., McNaughton & Glynn, 1981) and comprehension (e.g., Pehrsson, 1974) during the reading activity. In addition, research has consistently shown that good readers receive more contextual feedback as compared to graphophonemic feedback. Poor readers are also interrupted when they miscue more often than good readers (Hoffman & Clements, 1981).

Of the existing studies none has explored the impact of various types of sustaining feedback within low ability readers; nor have studies identified the baseline data of

the reader (i.e., reader's performance prior to treatment). It is given that ability is a factor in teacher feedback; but it is unclear how specific teacher behaviors that include the type and timing of teacher feedback may affect the performance of low ability readers. Therefore, it is the intention of this study to investigate the effects of sustaining feedback on the reading performance of low ability readers. Specifically, this study will investigate the effects of various feedback strategies by first identifying the baseline data of the reader, and secondly, describing the change that occurs over the treatment period.

Rationale

Learning theories attempt to explain the factors that affect the learning process. For example, behavioral theories look at stimulus-response, which reveals the role of reward and punishment as sources of reinforcement for learning. In Skinnerian terms a reinforcer is any environmental event that is programmed as a consequence of a response that can increase the rate of responding (Bolles, 1975). This strictly empirical definition is tempered by the fact that reinforcers do more than affect the preceding response; they also tend to elicit particular behaviors. This same definition can be applied to the role of teacher feedback during the reading process. For example, just as

behavioral research has shown that different types and timing of stimuli elicits predictable response (outcomes), reading research has shown that consistent teacher feedback behavior can produce predictable student reading performance in word recognition (Niles, 1979).

Learning theories have identified reinforcement, prior knowledge, knowledge and intuition, assimilation and accommodation as factors that affect the learning process. These factors may also affect the learning to read process, especially if the events of instruction are reviewed (i.e., gaining attention, informing the learner of the objective, stimulating recall of prerequisite learnings, presenting the stimulus material, providing "learning guidance," eliciting the performance, providing feedback about performance correctness, assessing the performance, and enhancing retention and transfer, (Gagne & Briggs, 1974). For example, stimulating recall of prerequisite learnings incorporates the concept of prior knowledge. Enhancing retention and transfer reflects the concept of assimilation and accommodation. These instructional events occur as a natural result of the learner's interaction with the particular materials of the activity; for example, when the beginning reader comes to recognize an unfamiliar printed word as something familiar in his oral vocabulary (Gagne & Briggs, 1974).

Oral reading is a common instructional activity. The most frequent teacher procedure of instruction during oral reading is interruption, which is often thought of as corrective feedback (Duffy & Rohler, 1982). Thus, the feedback provided by teachers during oral reading can be considered as a process of instruction in that it sets up criteria of performance and then specifies the conditions required for meeting them. As a consequence of this approach to oral reading, Hoffman (1979), offers a set of decision-making options that describes the feedback process. They will be discussed in the subsequent section.

The Sustaining Feedback Process

An oral reading activity can provide the teacher an opportunity to assess students' reading ability and provide feedback concerning the accuracy of their performance (O'Brien, 1981). Feedback also affords the teacher the opportunity to: 1) change or affect the miscue made by the reader, 2) bring the readers' attention to the significant cues; and 3) allows the reader to engage in some sort of correction activity (Hoffman, 1979; Niles, 1980). Thus, teacher feedback during oral reading can affect various student reading behaviors such as the quality of miscues, self-corrections, and comprehension during the reading activity.

Feedback is defined as an external source of information which aids the reader in the solution to a problem (Bourne, 1966). According to one view (Hoffman, 1979) in reading, the feedback process is initiated when the reader engages in an oral reading activity. It is unusual for the teacher to offer any feedback when the reader's oral response is consistent with the text; therefore, the process continues without interruption. In contrast, when the reader does miscue, it is common for the reader to receive feedback from the teacher or from some self-prompting activity (Niles, 1980).

According to Hoffman (1979) feedback may be characterized by a set of decisions: selection, timing, and form. In the selection decision, the teacher decides whether an overt response should be made to a particular miscue. In other words, the teacher may allow the student to continue reading without interruption or may interrupt the reader in order to provide feedback. In the timing decision, the teacher decides whether to provide feedback immediately following a miscue (e.g., within five seconds after the miscue) or to delay feedback until after the reader has completed reading the sentence or paragraph in which the miscue occurred (Hoffman, 1979).

The form decision addresses the question of what type of feedback the teacher will provide (Hoffman, 1979). The

specific form of feedback can be delineated in terms of terminal feedback and sustaining feedback. For example, feedback may be given simply by supplying the correct word to the reader. This type of feedback is terminal in that the resolution to the miscue is supplied by the teacher. When the teacher prompts the reader without supplying the correct word, this type of feedback is sustaining in that it brings the readers' attention to the significant cues and allow the reader to reach a resolution to the miscue (Anderson & Brophy, 1976). Three types of sustaining feedback have been noted (Allington, 1978):

- 1) Graphophonic: prompts which direct the reader's attention to the visual aspects of the word (e.g., "What's the first letter?").
- 2) Phonemic: prompts which direct the reader's attention to the graphophonemic correspondence (e.g., sounding it out).
- 3) Semantic and context: prompts which focus on cues surrounding the word and meaning (e.g., Does that make sense?).

The feedback process is complete once the teacher or the reader has made decisions concerning the selection, timing, and form of feedback and once the reader reaches a resolution. Figure 1 illustrates how these decisions may be linked in the feedback process. This figure only suggests an order for discussion purposes. Figure 2 illustrates a teacher's feedback options at each decision making level when a student miscues during oral reading.

The Feedback Process

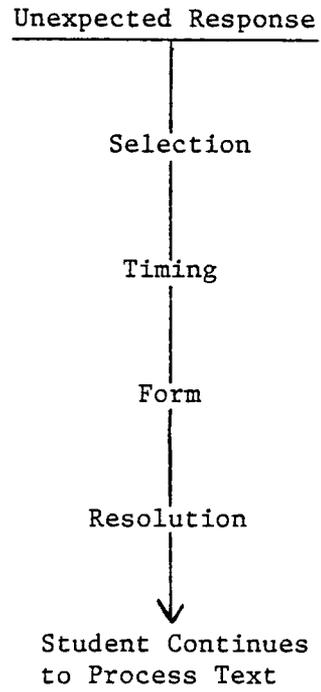


Figure 1
The Feedback Process

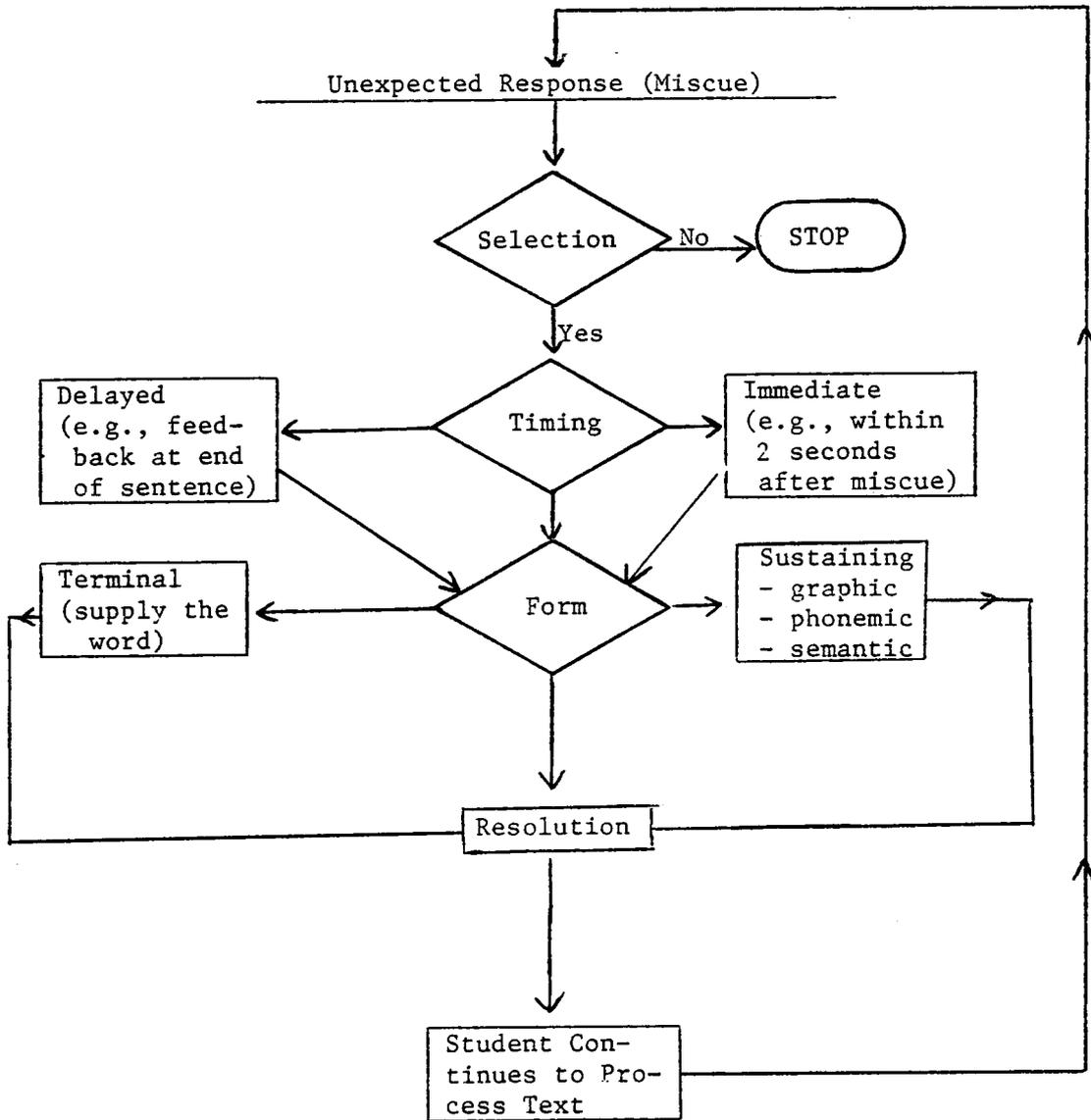


Figure 2
Teacher Feedback During Oral Reading

Effects of Teacher Feedback

The effects of teacher feedback on the reader's performance have not been clearly delineated. However, the type of feedback (graphophonemic and semantic) and timing of feedback (immediate and delayed) used by the teacher have been shown to influence the word recognition and comprehension performance of good and poor readers. While research is not conclusive, Pehrsson (1974); Niles, Graham, & Winstead (1977); Pany, McCoy, & Peters (1981); and Niles (1979) have presented evidence which suggests that the effect of teacher feedback on the student's oral reading performance in word recognition and comprehension depends on the type of feedback used by the teacher.

Pehrsson (1974), for example, studied the effects of teacher feedback on students to examine word recognition and comprehension performance. He contended that students read better when they were requested to read for meaning and not interrupted during the reading process. Furthermore, Pehrsson reported that students read with significantly less comprehension when word recognition was stressed and the errors were not corrected.

In another study, Niles, Graham, and Winstead (1977) compared the effects of an immediate sustaining feedback condition to a no-feedback condition to investigate word recognition and comprehension performance. The study

revealed that the students in the immediate feedback condition produced miscues that were graphically and phonemically more similar to the expected responses. They also reported that students in the uninterrupted condition had higher meaning-preserving miscues (word recognition) as well as higher retelling scores (comprehension). In contrast, Pany, McCoy, and Peters (1981) reported no significant differences in the corrective or the no-corrective condition for the primary or intermediate remedial readers in any of the miscue categories (e.g., graphic similarity or meaning change). Therefore, Pany, et al., (1981) concluded that teacher feedback during oral reading activities did not influence the student's oral reading performance (word recognition). However, they did report that primary readers, as compared to intermediate readers, had a higher retell score when they read under the no-correction condition.

In an extension of the Niles, et al., (1977) study, which included an immediate graphophonic and a no-feedback condition (Niles, 1979) included two additional prompts: 1) semantic feedback and 2) a sentence repeat condition. A qualitative analysis of the miscues made (word recognition), showed that readers who were prompted in the graphophonic condition produced responses that changed the author's intended meaning more than the readers in the other

conditions. However, it was revealed that no significant differences in comprehension were found for the total idea units recalled and the student's response to literal-level questions regardless of the feedback condition. A major conclusion of this study was that consistent sustaining teacher feedback behavior can produce predictable student reading performance for word recognition.

Timing of Teacher Feedback

According to Hoffman and Clements (1981), the timing of the teacher's feedback appears to be related to the reading ability of the student receiving the feedback. For example, immediate feedback (less than three seconds) was given to low ability readers at the point of the miscue, whereas, feedback was delayed with high ability readers. These differences in wait time were apparently varied by the teacher as a function of ability for the high ability readers, but not for the low ability readers.

Ways in which variation in the timing of corrective feedback affects the student's self-correction behavior were demonstrated by McNaughton & Glynn (1981). Their research suggests that under the immediate correction condition, as compared with delayed corrections, the student was less accurate and self-corrected a smaller percentage of miscues. Further analysis of the miscues and self-corrections, that

occurred during independent reading, was conducted in a second study (McNaughton, 1981). The results indicated that the reader was less likely to offer a response for a text word after immediate correction. Moreover, the reader was less likely to self-correct miscues which were semantically unacceptable, syntactically unacceptable and graphically dissimilar after immediate correction.

Reading Ability

Besides knowing the type and timing of feedback typically provided low ability readers, research findings point toward a profile of low ability readers. There is ample evidence to suggest that low ability readers' word recognition is qualitatively different from more able readers.

Weber (1970) presented evidence relative to word recognition errors made by low ability readers. Eighty percent of the errors made were substitutions. The remaining errors were divided equally between omissions and insertions, and reversals were rare. A measure of graphic similarity revealed that the more able readers consistently out performed the low ability readers in closely approaching the correct response.

According to Hoffman and Clements (1981), poor readers also primarily make substitution miscues which resemble the

graphophonic features of the printed text and substantially change the context. D'Angelo's (1981) study offers insight concerning the students' self-prompting strategies. Poor readers relied more on the graphophonic characteristics of words and tended to correct substitution miscues when they were graphophonemically unacceptable.

Differences in the reading strategies favored by high and low ability readers were examined by Au (1977). Analysis of oral reading errors revealed consistent patterns of errors by the two groups. The low ability readers had a higher percentage of nonmeaningful substitutions. They differed from good readers even more in percentage of omissions. The percent of errors self-corrected was the most significant finding between the two groups.

Type and Timing of Teacher Feedback and Reading Ability

Descriptive studies of teacher feedback have shown that qualitative distinctions in type and timing of feedback appear to be related to the ability level of the reader. According to Allington (1983) good readers are more likely to be presented the type of feedback that emphasizes meaning, while poor readers are more likely to be presented the type of feedback that emphasizes words, sounds, and letters. Some researchers, Allington (1983); Hoffman and Kugle (1981); Hoffman and Clements (1981) have also shown

that delayed feedback (as compared with immediate feedback) is more often directed to good readers than to the poor readers.

It is unclear as to how a reader's performance is affected by both of these features of feedback. A comprehensive study was conducted by Hoffman, O'Neal, and Clements (1981) in an effort to describe and offer insight about the effects of different teacher feedback strategies on the student's oral reading performance. Hoffman et al., (1982) investigated ways in which variations in type of feedback (terminal, graphophonic, and contextual) and timing (immediate and delayed) influence students' oral reading behavior. Analysis of these data revealed a statistically significant four-way interaction between the type of feedback, the timing of feedback, the type of miscue, and the ability level of the group.

It appears that under immediate graphophonic feedback conditions low ability readers hesitate rather than mispronounce. One explanation for this tendency is that when students know that they will be supplied with the correct word they pause; they actually attempt to lessen their own error rate simply by pausing rather than by attempting a response. When the students received delayed graphophonic feedback, in the Hoffman, et al., (1982) study, the low ability readers performed differently. Instead of

hesitation, they exhibited a high incidence of mispronunciation type miscues, as compared to the immediate graphophonic condition. The researchers of this study concluded that the differential performance of the low ability readers under various feedback conditions appeared to be the major source of the interaction.

Statement of the Problem

The extent and nature of the influence of teacher feedback on reading performance remains unclear. It is even less clear for low ability readers. Data do seem to indicate that consistent teacher feedback behavior can produce predictable student reading performance in word recognition (Niles, 1979).

Proponents of teacher feedback encourage teachers to provide poor readers with semantic type feedback and delayed timing which is often used with more able readers (Allington, 1983). However, little is known about the influence of such teacher feedback on the performance of low ability readers. Consequently, the purpose of this study is to examine the effects of teacher feedback on the oral reading performance of low ability second grade readers. In particular, two features of feedback, type (graphophonemic and semantic) and timing (immediate and delayed) will be examined.

Research Questions

Specific questions to be investigated concerning low ability readers are as follows:

- 1) What is the influence of type and timing of teacher feedback as they form three treatment conditions, namely graphophonemic immediate, graphophonemic delayed, and semantic delayed on low ability students' oral reading performance?
- 2) Does the sequence of treatments affect the overall reading performance of low ability readers?

Organization of the Remainder of the Study

The remaining chapters will be presented as indicated. Chapter two will provide a review of literature related to the study. The methodology, a description of the design of the study, and the data collection technique utilized in recording and evaluating the data will be included in Chapter three. An analysis of the data will be presented in Chapter four; Chapter five will contain the discussion, conclusions, suggestions for further research and summary.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Some of the data on teacher feedback has focused on experimental studies, while other studies have described teacher behavior during oral reading. Moreover, some of the studies on oral reading have been conducted in group settings while others have been conducted on an individual basis. The feedback strategies, treatment time and the performance measure have varied in many of the experimental studies. Because some of these studies have produced conflicting results it is unclear as to what variables affect the student's word recognition performance and comprehension. Furthermore, it is impossible to ascertain how much or what type of feedback administered over a period of time is required to produce an intended effect for an individual student (Niles, 1984).

Therefore, the purpose of this chapter is to review the research that investigated word recognition performance and reading comprehension of young readers. The notion that the effects of teacher feedback vary according to type, timing, and ability level of the student is discussed.

Type of Feedback

Existing studies have produced conflicting results concerning the effects of teacher feedback on the student's reading performance. Evidence concerning the students ability to recode words and comprehension was studied by Pehrsson (1974). Twenty-five average fifth graders were asked to read three different 200-word expository passages taken from a sixth grade basal reader. The students read passages under three conditions:

- 1) students were instructed to read the passage for meaning without any teacher feedback, so that they could tell the examiner what it was about,
- 2) students were instructed to read the passage and focus on the correct pronunciation of the words (students also received immediate feedback under this condition for miscues and retold the passage to the examiner immediately after oral reading),
- 3) students were instructed to read carefully and pay close attention to the words. There was no feedback under this condition.

It was concluded that more miscues were made in conditions two and three when the readers were not instructed to use meaning as a cue for word recognition. Pehrsson, however, did not report qualitative analysis of the type of errors made. In addition, Pehrsson (1974) found that the student read with significantly less comprehension when word recognition was stressed and miscues were corrected immediately.

Research conducted by Niles, Graham, and Winstead (1977) corroborated the findings of Pehrsson (1974). This study compared two types of feedback conditions: 1) graphic and phonic feedback, and 2) no feedback (uninterrupted) condition with average fourth grade readers. The treatment, reading under the assigned condition, was conducted for fifteen minutes for each student on four consecutive days. Testing was conducted on the fifth day. Results indicated that comprehension (retelling scores) were significantly higher in the no feedback condition. Qualitative differences were also evident. The graphic feedback condition produced miscues which were more graphically similar to the text. In contrast, readers in the no feedback condition focused more on the meaning of the text; they produced miscues which were more semantically acceptable and tended not to change the author's intended meaning.

Based on the results of Pehrsson (1974) and Niles, et al., (1977) it could be concluded that teacher feedback responses, particularly of a graphic and phonic nature, were more of a hinderance than aid to the reader's comprehension of the text. The findings reported by Pany, McCoy, and Peters (1981) did not lend support to the previous findings of Niles, et al., (1977). These researchers found that while primary remedial readers (1.5 to 3.0 reading level)

had a higher retell score (comprehension) if they read without corrective feedback, intermediate level students who received feedback showed no difference in retell score from those who did not receive feedback. Also, when multiple choice questions were used to measure comprehension there were no significant differences between the mean number of questions answered correctly by primary or intermediate students in either of the two conditions. Thus, Pany, et al., (1981) concluded that teacher feedback during oral reading activities did not affect poor readers in the same way it has shown to affect the comprehension of average readers.

A qualitative analysis of the oral reading errors by Pany, et al., (1981) revealed that there were no significant differences between treatments for either the primary or intermediate groups in any of the miscue categories. This is also in contrast to the Niles, et al., (1977) study.

Niles (1979) extended the earlier feedback, no feedback studies by elaborating the type of feedback; he added a semantic feedback condition in studying average third graders. No significant differences were found for the recalls (comprehension) that occurred among the four conditions (no feedback, graphophonic, semantic, and sentence repeat). This finding does not support earlier research by Pehrsson (1974) and Niles, et al., (1977), who

reported that the students had a higher comprehension score when they were not interrupted. Niles (1979), also reported that the no feedback group answered fewer questions correctly than any of the other three conditions. The highest percentage of questions were answered in the sentence repeat condition. Similar to Niles, et al., (1977) miscues analysis (word recognition) revealed that students receiving graphophonic feedback produced more responses which changed the author's intended meaning than students who were in the other three conditions. Although the category of graphic similarity did not differ significantly in any of the categories, there was evidence of a trend that the students in the graphophonic condition produced more responses which were graphically similar to the word in the text than the other three conditions.

Because there were variations in the results found in the four previous studies, it is difficult to say what variable(s) affected the students' performance. Possibly, the inconsistent findings may be explained by the following variables: 1) the nature of the comprehension measure, 2) ability level of the readers, 3) the task directions, and 4) the type of teacher feedback offered to the student. In the Niles, et al., (1977) and Pehrsson (1974) studies the Reading Miscue Inventory (Goodman & Burke, 1972) was used as the measure for comprehension. With this instrument the

uninterrupted condition resulted in a higher retell score. The Reading Miscue Inventory analyzes story retell according to the disclosure of plot, theme, story events, and character analysis. Niles (1979) used a discourse analysis procedure developed by Taylor (1978), which did not offer supporting results when he cued the free retells of the stories read by the students. An instrument developed by Schwartz (1978) was used by Pany, et al., (1981) to measure retell. This instrument divided the story text into six functional units: What Happened, Modification, Where, When How, and Why and found a significant higher retell score for the uninterrupted primary level readers, but not for the intermediate level readers under the same condition. Each of these measures, (Goodman & Burke, 1972; Taylor, 1978; and Schwartz, 1978), are rating scales in which all of the scores are based on subjective judgment. Thus, the instrument used to evaluate the comprehension measure may have caused the variation in the students' retell score.

Another variable to be considered as an alternative explanation for the discrepancy in results, is the reading level of the students. Whereas Pehrsson (1974) and Niles, et al., (1977) used average intermediate reading level students (fifth and fourth grades respectively), Niles (1979) used average primary reading level students (third-graders). Pany, et al., (1981) on the other hand, used

students that were remedial readers, i.e., at least one grade level below their grade placement in school. Because Niles, (1979); Pehrsson (1974); Niles, et al., (1977) and Pany, et al., (1981) used different levels of students, it is possible to attribute the discrepancy in retell scores to the reading level and grade level of the students.

A third variable that may have influenced the varying results in these four studies is the kind of task directions the students had been accustomed to prior to the treatment conditions. It is reasonable to speculate that the fourth-graders in Niles, et al., (1977), and the fifth-graders used in Pehrsson's (1974) study were less accustomed to receiving teacher interruptions. If this were the case, it is reasonable to assume that the average fourth and fifth-graders were perhaps more accustomed to reading silently and relying more on self-prompts. On the other hand, young readers and/or poor readers may be more dependent upon frequent interruptions (feedback) by the teacher because they tend to make more miscues.

Finally, the findings emitting from this group of studies also tend to indicate that the type of feedback may be a significant factor in producing different results (word recognition performance). Of the studies examined here, the treatments have been differentiated. Niles, (1979), for example, examined the effects of sustaining graphophonic and

semantic type feedback on the students oral reading performance (word recognition). Pehrsson (1974) and Niles, et al., (1977) only used sustaining graphophonic teacher feedback.

In terms of the grade levels, the three aforementioned studies (Niles, et al., 1977; Niles, 1979; and Pehrsson, 1974) only extended these feedback strategies with average third, fourth, and fifth, grade students. Because the research evidence is basically limited to average readers, it is the intent of this study to manipulate both graphophonemic and semantic feedback with low ability second grade readers. Table 1 provides a summary of Pehrsson (1974); Niles, et al., (1977); Pany, et al., (1981); and Niles, (1979) studies.

Timing of Feedback

The timing of the teacher's feedback interruptions is an important factor that appears to be related to the reading performance of the student. The research conducted by McNaughton and Glynn (1981) examined the timing of teacher feedback to errors made by average second grade readers. The readers received either delayed or immediate feedback to oral reading errors while reading familiar text from a graded series. These researchers reported that the readers were less accurate and self-corrected a smaller

Table 1
SUMMARY OF RELATED STUDIES

Author(s) and Date of Study	Niles, J. A., 1979	Niles, Graham, & Winstead, 1977	Pany, McCoy, & Peters, 1981	Pehrsson, 1974
Title	The effects of selected teacher prompting strategies on oral reading performance.	The effects of teacher responses on children's oral reading performance.	The effects of corrective feedback on comprehension skills of remedial students.	The effects of teacher interference during the process of reading
Purpose	To examine the effects on reader behavior on the uncorrected prompts, orthographic and 2 prompting strategies.	To examine 2 reading environments which represent the interrupted and uninterrupted condition.	To examine the effects of corrective feedback during oral reading on comprehension performance.	To determine the effectiveness of corrective feedback.
Subjects	40 average third graders	24 average fourth graders	34 remedial readers 18 primary 1.5 - 3.0 16 Immediate 3.5 - 5.0	25 average fifth graders
Text Type	Expository	Narrative	Expository	Expository
Comprehension Measure	Taylor (1978) discourse analysis	Reading Miscue Inventory (Goodman & Burke, 1972)	Schwartz (1978) Multiple Choice Q. (SRA Rdg. Lab)	Reading Miscue Inventory
Task Directions/Results	Uninterrupted group answered fewer questions correctly.	Uninterrupted condition indicated higher retelling score.	Higher retell score for primary in the uninterrupted condition. No significant difference for story retell between the interrupted or uninterrupted groups (primary and intermediate) using the Multiple Choice Questions.	Tasks - read for meaning (without feedback), focus on pronunciation, and read carefully with accuracy. Higher comprehension when instructed to read for meaning.

proportion of their miscues when they received immediate as compared with delayed corrections. Further analysis of the same study, McNaughton (1981), reported that these effects were also evident when the students independently read a series of more difficult (i.e., unfamiliar text.) It should be noted that the influence of timing on one series of text (i.e., familiar) was strong enough to generalize to the second series of text (i.e., unfamiliar) even though no interference occurred. This study lends further support to the interpretation that immediate correction interferes with the processing of text (Niles, Graham, and Winstead, 1977).

Johnson and Afflerbach (1983) suggest that delayed teacher feedback provides the reader with more of an opportunity or thinking time to engage in self-corrections. These researchers observed the feedback behavior of seven teachers working with remedial reading students. With regard to the students' performance, the data revealed that self-corrections were almost non-existent when students received immediate teacher feedback. Thus, it is reasonable to assume that delaying teacher feedback might result in an increase in self-corrections.

A recent study conducted by Hoffman and Clements (1981) with eight second grade teachers described the characteristics and effects of the verbal feedback offered by teachers to student miscues occurring during oral

reading. Evidence indicated that there was a statistically significant interaction between ability groups and timing with the low ability readers more likely to receive feedback in less than three seconds after a miscue as compared to the high ability readers. These researchers also indicated that the high ability readers were more likely to receive delayed teacher feedback with low meaning change miscues while with the low ability readers there were no differences in timing for meaning change errors.

The first and third grade teachers in Hoffman and Kugle's (1981) study justified this type of feedback behavior by stating that they did not want the poor reader to become frustrated with the processing of the text. On the other hand, teachers might overlook a significant miscue made by a poor reader if they had already been frequently interrupted. These authors also reported that teachers may interrupt a good reader to interject feedback (thoughtless interruptions, Niles, et al., 1977) just because they had not said anything for a while on a non-meaning change miscue (e.g., house for home).

Reading Ability

In this section, research will be reviewed which analyzed the oral reading errors of low ability students as compared to more proficient readers. The findings reported serve to provide a profile of the low ability reader.

Beimiller (1970), for example, studied the oral reading errors made by forty-two students in two first grade classes from October to May. In his study, he analyzed errors in terms of contextual information and graphic information used by the students and he studied the students non-response errors. He further identified three developmental stages. The error analyses indicated that the first stage of oral reading was dominated by the use of contextual information, while the second stage revealed a predominance of non-response errors and an increase in the use of graphic information. This stage was also characterized by a decrease in the use of contextual information. The third stage of oral reading was one in which the students used both contextual and graphic information and there was a decline in non-response errors. The non-response phase was interpreted by the researcher as shift by the student to attending primarily to graphic information.

Data from this study revealed that there were no differences in contextual constrained responses for average and low ability readers but the low ability readers had fewer errors rated as graphically similar. Beimiller (1970) also found that as the passages increased in difficulty (measured by proportion of new words) both groups of readers made more non-response and graphic similarity errors. Nevertheless, the more able reader made fewer such errors

than the low ability readers. Therefore, he argued that as the passages increased in difficulty all readers make greater use of graphic information. These findings are generally supported by Leu (1982). According to this researcher the difficulty passages forces the student to shift to a processing strategy that focuses more on the available graphic information and less on contextual information.

Weber (1970) also conducted a study over time with twenty-one first grade high and low ability readers, to compare errors made at the beginning of the year to those made at the end of the year. Quantitative differences were evident in results across groups. Results revealed that the high group made far more errors (639) than the low group (403). The high group, however, read far more material than the low group which accounts for the higher number of errors. Substitutions of one word for another comprised eighty percent of the total errors. The remaining errors were divided almost equally between between omissions and insertions, and reversals were rare among both groups. Differences between the two groups appeared to be non significant. There were two notable shifts in distribution from Time I to Time II: 1) an increase of omission errors from 6.6% to 10.3% and 2) a decrease in insertion errors from 11.5% to 6.9%. These data also revealed that 92.8% of

the errors judged for semantic appropriateness were found to be consistent with the meaning of the rest of the sentence. The proportion was slightly lower (91.1%) for the high group than for the low group (95.3%).

A measure of graphic similarity revealed that the high level readers excelled the low level readers in closely approaching the correct response, indicating a greater attention to graphic information on the part of the high level readers. This finding contradicts the Smith (1971) and Au (1977) oral reading error data which indicates that: 1) good readers use less graphic information than the poor readers and 2) good readers use more contextual information during oral reading than poor readers.

In addition to studying the qualitative differences in good and poor readers' oral reading miscues, some research has investigated the self-correction behavior of students. For example, D'Angelo's (1981) study offers insight concerning the relationship between the students' reading ability and their self-prompting strategies. Research gathered from this study showed good readers in grades four through eight consistently corrected a higher percentage of substitutions than poor readers from grades five through seven. The good readers relied less on the graphophonic characteristics of words while the poor readers tended to correct substitutions miscues when graphophonemically

unacceptable. Self-prompting strategies were employed by both groups when the miscues during oral reading resulted in a semantic deviation than when there was a syntactic error.

The results of a study by Au (1977) also showed a significant difference in the percent of errors self-corrected between good and poor readers. In this study, the good readers frequently corrected their own errors, but the poor readers rarely corrected their own errors.

Specifically, good readers used context in seventy-two percent of their errors, while poor readers used context in only thirty-eight percent of their errors, which is a significant difference. These findings support the notion that poor readers might benefit if given more opportunity to self-correct (Recht, 1976) or if they are trained to use self-correction strategies effectively. There is some experimental evidence to support this interpretation, which will be subsequently discussed.

A study conducted by Ganschow, Weber, and Suelter (1984) suggests that self-monitoring and feedback can increase reading performance. Ganschow, et al., (1984) examined the efficacy of self-monitoring and feedback to alter the reading behavior of a student who had repeated first grade. This study is particularly interesting because the researchers accounted for the entering behavior of the student. As pointed out in Chapter I, previous studies have

not addressed this issue. Because Ganschow, et al., ((1984) accounted for the entering behavior of the student (performance prior to treatment) the researchers were able to see if the behavior regressed back to baseline when the treatment was withdrawn. The results revealed that the student's correct reading of words in context increased from baseline to performance. These findings suggest that the degree of change in the student's reading behavior was influenced by the self-monitoring and the feedback. An interesting point about this study is the transfer effects of the self-monitoring and feedback. The researchers measured the reading behavior of the student three months later and still found a high level of performance on the part of the student. Because behavior modification was a part of this study it is possible that the giving of rewards may have been the agent that significantly motivated a high level of performance.

Pflaum and Pascarella (1980) designed a study to teach primary learning-disabled readers methods for correcting miscues that changed the author's intended meaning. Specifically, these researchers taught the students how to use context to determine the impact of their miscues on meaning and how to correct their miscues to retain the author's intended meaning. The results of this study suggests that learning-disabled students, who had acquired

reading proficiency beyond the beginning level, could benefit from training in the use of context to maintain the author's intended meaning. In other words, these children demonstrated the ability to alter their behavior if directed to observe their actions.

Other research has reported negative results in the use of context to teach difficult words during oral reading. For example, Jenkins and Larson (1978) found context to be a less effective method for teaching difficult words than the drill method (words pronounced and taught to mastery at the end of the reading activity) with junior high remedial readers. Because these researchers only used junior high remedial readers in their study, caution should be exercised in generalizing these results to other populations. More proficient readers or students in another grade may yield somewhat different results.

Hoffman and Clements (1981) study described the characteristics and effects of verbal feedback and observed the responses of eight second grade teachers to the miscues of high and low ability readers. Based on the data from this study, the low ability readers were more likely to make hesitation and mispronunciation type miscues than the high ability readers. The high ability readers were more likely to make repetitions, omissions, and insertions than the low ability readers. Though the rate for substitution miscues

were approximately equal for the two groups, the poor reader is also one who primarily makes substitution miscues which resemble the graphophonic features of the text word but substantially change the author's intended meaning.

The strategies of high and low ability readers have been compared and shown to be different. Yet, the current research investigating the analysis of oral reading errors is inconclusive and contradictory in many cases. In view of this situation, it is difficult to accurately describe the oral reading performance of low ability readers.

Nevertheless, a number of research studies suggests that the young low ability reader uses more graphic information than more able readers. Specifically, the poor reader primarily makes substitution miscues which resemble the text graphically but deviate from the author's meaning. As passage difficulty increases non-response and graphic similarity errors also increase and poor readers are less likely to self-correct contextual inappropriate errors.

Type and Timing of Teacher Feedback and Reading Ability

The research here examines the literature relative to the combined effects of type and timing of teacher feedback on the oral reading performance of students.

In the Allington (1980) study, the interruption behaviors that occurred with high and low reading groups

were compared and examined for the type and frequency to determine whether interruption behaviors differed based on the readers' group placement (which is a reflection of reading ability). The teacher interruption behaviors were categorized into two dimensions: point of interruption and direction of interruption. The point of interruption included three categories: 1) no interruption; 2) interrupted at the point of the error (immediate); and 3) interrupted after the error (delayed). The direction of interruption included five categories: 1) graphemic (e.g., teacher response such as "What was the first letter?"); 2) phonemic (e.g., teacher response such as, "Sound it out."); 3) semantic and syntactic (e.g., teacher response such as, "Does that make sense?"); 4) teacher pronounces the word; and 5) other, teacher responses such as "No," "Try to get that word." The results indicated that students with good reading ability were prompted more with semantic cues and feedback was delayed more often to the end of the sentence break. The poor readers were more likely to be interrupted at the point of error and they received graphophonic type feedback when they miscued during oral reading. According to Allington (1980), poor readers may not perform as efficiently as good readers because we treat them differently.

These results were further supported in a study by Hoffman and Clements (1981) which suggested that the type of feedback administered was determined by the reading ability of the student. Hoffman and Clements (1981) conducted a study in which feedback was categorized into one of three types: 1) no feedback, 2) terminal, or 3) sustaining. Evidence indicated that good readers were allowed to continue reading without interruption (no feedback) following seventy-three percent of their reading miscues. However, the poor readers received no feedback following only twenty percent of their miscues. The good readers only had sixteen percent terminal feedback and eleven percent sustaining feedback following their miscues. Terminal feedback was directed to the poor reader following sixty-four percent of their miscues and sixteen percent sustaining feedback following miscues during oral reading.

Only one study has attempted to manipulate both type and timing of teacher feedback. The study conducted by Hoffman, O'Neal, and Clements (1982) examined ways in which variations in type and timing of teacher verbal feedback are related to differences in students oral reading behavior. Two groups of second-graders (high and low ability) both read 150-word passages. The most frequent types of miscues across all groups were mispronunciations (fifty-six percent), hesitations (twenty-nine percent), and

substitutions (fifteen percent). However, a major finding in this study was that low ability readers had more hesitation type miscues with delayed contextual feedback when compared with readers who received immediate contextual prompts from the teacher. Low ability readers in the immediate contextual condition appeared to mispronounce rather than hesitate. One explanation for this behavior is that immediate correction for low ability readers does not allow them enough time to process the textual cues. According to Johnson and Afflerbach (1983) delayed feedback provides the reader with more of an opportunity or thinking time to engage in a self-prompting activity. Thus, it seems reasonable to speculate that low ability readers need to be afforded more delayed feedback in order to engage in self-prompting activities. The results of Hoffman, et al., (1982) clearly indicated differences in verbal feedback can affect the quality of student performance during oral reading. In addition, it seems apparent, from these data, that timing is a critical factor influencing the ability or willingness of the low ability reader to apply certain strategies.

A recent study by Hoffman, O'Neal, Kastler, Clements, Segal, and Nash (1984) demonstrated the effects of teacher-student interaction patterns surrounding reading miscues during guided oral reading with high and low ability

readers. The findings point toward a relationship between miscue related behaviors and teacher verbal feedback patterns. For example, miscues such as hesitations and mispronunciations are more likely to receive an overt response from the teacher than other types of miscues. In addition, those miscues which result in a substantial meaning change are more likely to be responded to than those which result in a low meaning change. The low ability readers were more likely to pause or be immediately interrupted by the teacher as compared to the more proficient readers who were likely to continue reading and immediately self-correct. Results also indicated that the proportion of hesitations were greater for the low ability readers than the more able readers. A major finding in this study was the absence of a statistically significant interaction between ability group and feedback type (i.e., no verbal feedback, terminal, and sustaining). Nor were there any statistically significant differences related to timing of feedback and ability group. Based on these findings the researchers of this study concluded that the teachers appeared to be adjusting their verbal feedback behavior according to the qualitative characteristics of the miscues rather than using a pattern.

Summary

The research reviewed in this chapter, although not conclusive, has demonstrated that teacher feedback differs for high and low ability readers, and that low ability readers seem to receive more graphophonemic feedback as compared to semantic feedback. Moreover, the available research suggests that teacher feedback behavior affects the oral reading performance (word recognition) of students differently. Analysis of the studies indicates that ability appears to influence word recognition performance with high ability students performing qualitatively better than the low ability students. However, it is not clear what influence ability will have when low ability students are offered various types of sustaining teacher feedback. If specific feedback strategies affect low ability readers differently, then it is important to ascertain the type and timing of feedback strategies that would enable teachers to make informed decisions about the most appropriate feedback for particular readers.

CHAPTER III

METHODOLOGY

This study represents an investigation of the effects of sustaining feedback on the reading performance of low ability readers. Specifically, the study was designed to investigate how two features of sustaining teacher feedback, type (graphophonemic and semantic) and timing (immediate and delayed) influence word recognition and comprehension of second grade low ability readers. The type, timing and order in which the teacher feedback strategies were delivered to the readers varied in terms of the design.

To provide a complete description of the methodology utilized in this investigation, this chapter includes an explanation of the following sections: 1) sample; 2) task; 3) reading materials; 4) treatment conditions; 5) dependent measures; 6) design; and 7) data analysis procedures.

Sample

The participants in this study were second-grade students identified by performance on the Slosson Oral Reading Test (Slosson, 1963) as low ability readers at an elementary school in a county in Southwestern Virginia.

Nine second-grade students were randomly selected from fifteen students who received a reading equivalency score between 1.0 and 1.9 on the Harcourt Brace Jovanovich Primary Placement Test (1983). A letter, with an attached permission slip, was sent to the parents of each student identified asking permission for the child to participate in the study (see Appendix A). Three sample groups were formed by randomly assigning the nine students to the three treatment conditions: 1) graphophonemic immediate, 2) graphophonemic delayed, and 3) semantic delayed. The researcher worked with each student individually, and each of twenty-three 10-15 minute sessions were tape recorded.

Task

On each of twenty-three days the students read orally a different 200-400 word passage. The feedback the student received depended on the assignment to the specific treatment condition and the sequence in the research design.

Procedures for data collections were as follows:

1. Before the reader began, the researcher spent a few minutes of light conversation with the student to put him/her at ease.
2. The researcher then informed the student of the task. Each of the students were asked to read a short story. The students were told that they would not be graded for their reading performance.
3. Following the oral reading activity, the students were requested to answer some questions about the passage they read. For

each story eight literal questions were asked. One follow-up query was allowed per response if the appropriateness of the answer was incomplete. The researcher then prompted the student by asking "Can you tell me more?"

4. The entire session was tape recorded. Later the tapes were replayed to complete the recording of miscues on a pre-prepared worksheet (See Appendix B). The worksheet became the basis for the miscue analysis.

Reading Materials

The reading passages for this study were taken from basal texts of Rand McNally and Company (Fay, L., Ross, R. R., and Laray, M., 1974) and MacMillan Publishing Company, Inc. (Smith, C. B. and Wardhaugh, R., 1975) reading series. The participants had not previously read in these texts. Twenty-three narrative passages were selected and randomly assigned to each day of the treatment period. The Harris-Jacobson Readability Formula (Harris & Jacobson, 1972) was used to verify that the level of each passage was within the 1.5 - 2.9 range of difficulty. Text from one-half to one and one-half years beyond the student's reading level was used because, according to Goodman and Burke, (1972), the selected reading must be difficult enough for the student so that errors are made, but not so difficult that the student would be unable to continue independently. All of the students read the same passage on a given day in each of the treatment conditions.

Treatment Conditions

Three teacher feedback treatment conditions that included type and timing variables were used in this study. They include: 1) graphophonemic immediate, 2) graphophonemic delayed, and 3) semantic delayed.

Graphophonemic Immediate Feedback. When the reader made an unexpected response that changed the author's intended meaning (e.g., horse for house) the researcher immediately (within two seconds) by verbal count called the reader's attention to the deviation by pointing to the word and asking the reader, "Look closely at the letters in this word" or "Look closely at this word" (The researcher pointed to the error as this cue was given.). The responses to oral reading errors are explained in Table 2.

Graphophonemic Delayed Feedback. In this condition, the researcher called the reader's attention to the miscue after the reader had completed the sentence or a complete thought within a complex sentence. The researcher then cued the reader by asking him/her to, "Look closely at the letters in this word" (The researcher pointed to the error as this prompt was given.). If the student miscued on the last word in the sentence, the researcher delayed the feedback response for four seconds.

Semantic Delayed Feedback. When the reader made an unexpected response, which changed the author's intended

Table 2
Responses to Oral Reading Errors
Graphophonemic - Immediate or Delayed

<u>Errors</u>	
Substitutions	"Look closely at this word"
or	or
Mispronunciations	"Look closely at the letters in this word"
Omissions	"You skipped a word"
Insertions	"Look closely at the words"
Semantic - Delayed	
Substitutions	"Does that make sense"
or	
Mispronunciations	
or	
Omissions	
or	
Insertions	
*Hesitations (of five seconds or more)	"Keep going"

meaning, the researcher asked the reader, "Does that make sense?" (the researcher pointed to the error as this cue was given). This feedback response was interjected after the reader had completed reading the sentence or a complete thought within a complex sentence. However, if the student miscued on the last word in the sentence, the researcher delayed the feedback response for four seconds.

Dependent Measures

The dependent variables in this study are oral reading performance, which is defined as word recognition accuracy, and literal comprehension. These behaviors were measured by using qualitative analysis of miscues (graphic similarity, semantic acceptability, and self-corrections) and literal comprehension questions.

Word Recognition. The researcher recorded all oral reading miscues. These miscues were classified as either mispronunciations, substitutions, omissions, or insertions.

Graphic Similarity. For certain types of miscues (i.e., substitutions and mispronunciations) the researcher made a judgement concerning the degree of similarity between the reader's response and the expected response. If the reader substituted a word that had at least two of the three parts of the observed response the same as the text word, a high degree of similarity was said to exist. If less than

two of the three parts of the observed response conformed to the text word, a low degree of graphic similarity was said to exist (Hoffman & Baker, 1981).

A second measure was also used to further analyze the quality of miscues substituted by the readers in terms of graphic similarity. Evaluation of miscues was accomplished by applying specific scoring criteria outlined in the procedures of the Reading Strategies Profile (Hutson & Gove, 1980). This procedure provides the means for statistical comparison among students within treatments, as well as across groups. A specific scoring arrangement (Lang, 1983) was used with the Reading Strategies Profile because all of the readers did not produce the maximum number of miscues possible (25) for each reading. Therefore, the reader's observed score for the miscue assessment was based on two factors: 1) an automatic assignment of three points for each non-miscue, and 2) an assignment of zero, one, or two points for each miscue produced based on a qualitative evaluation of its graphic similarity (See Appendix C for scoring criteria). The use of such procedures allows for the balancing of the scoring without resorting to proportions.

The total miscue score was computed by using the following formula: $3(25 - \text{no. of miscues evaluated}) + \text{Graphic Similarity Score}$. For example, if a student did not

miscue at all, his total score would be $3(25-0) + 0 = 75$ points. Seventy-five was the maximum score possible for this assessment. On the other hand, if a student miscued six times and the qualitative analysis of those six miscues resulted in a Graphic Similarity Score of 12, the score would be $3(25-10) + 12 = 57$ points. Finally, if a student produced 25 miscues, none of which began with the same first letter and the response did not have one-half or more letters overlapping with those in the printed word (Hutson & Gove, 1980), the total score for this assessment would be zero points, $(3(25-25) + 0 = 0)$ the minimum score.

Semantic Acceptability. If the miscue (i.e., mispronunciation, substitution, insertion, omission) changed the intended meaning of the author, it was coded as a substantial change (e.g. horse for house) in meaning. However, if the miscue caused a minor change (e.g. yelling for speaking) in the author's intended meaning, then it was coded as a low meaning change (Hoffman and Baker, 1981). The score criteria for Reading Strategies Profile was also used to qualitatively evaluate miscues for their semantic acceptability (see Appendix C for scoring criteria). The total miscue was computed with the following formula: $3(25 - \text{no. of miscues evaluated}) + \text{Semantic Acceptability Score}$.

Self-Corrections. A student's ability to self-correct is believed to provide evidence of the reader's awareness that he/she has produced a miscue that needs correction (Recht, 1976). To determine the number of self-initiated prompts, in which the reader regresses and attempts to make sense of an inconsistency, the number of times the student corrected a miscue was counted. If the student was unsuccessful in his/her attempts to self-correct, the student received one feedback response from the researcher. If the student was still unsuccessful, the researcher instructed the student to skip the word and continue reading.

Comprehension. Reading comprehension was operationally defined as the number of correct responses a student received on an informal test comprised of eight literal questions for each 200-400 word passage. For this study, literal level questions were used because they incorporated information directly stated in the text. Literal recall requires the student to produce explicit statements from a passage (Pearson & Johnson, 1978). Moreover, research has shown that both able and less proficient readers are able to maintain a high level of accuracy in their recall of literal information (Aulls and Gelbart, 1980).

The eight comprehension questions included three questions formulated from the beginning (setting), three

formulated from the middle (initiating events), and two formulated from the end (conclusion) of the passage to assess the student's ability to recall the printed text. The questions were constructed by performing a WH-transformation. Bormuth (1970) refers to this operation as item transformation, which consists of a set of rules to transform statements from textual material into test items that measure comprehension of those statements. These rules provide a direct link between the context and the item. The items are sometimes called a rote or verbatim question. They are formed from the base sentence by following a set of transformational rules. Typically, the transformation involves the reordering of particular words or phrases for others. Table 3 provides an example of WH-transformation.

The questions were presented orally in an order that followed the story sequence; the students' response was rated according to whether or not they matched the author's message stated in the passage. An answer key for the eight questions accompanying each passage was developed. For example, the student received one point for each response stated explicitly using the same key words or synonyms as those used by the author or if the response was paraphrased in a way which closely approximated the author's meaning. A half point (.5) was given for each partially answered question. No points were given if the author's stated

Table 3

Wh- Transformation

Type of Transformation	Transformation Rules	Base Sentence	Item (Word)
wh-	<ol style="list-style-type: none"> 1. Assign a structure to the sentence. 2. Select the noun or noun phrase to be tested. 3. Delete all the words dominated by the noun or noun phrase. 4. Replace the deleted words with a pro element (e.g., who, what, which, why). 5. Shift the pro element to the front of the sentence. 	Sarah ran to the store.	Who ran to the store?

Source: Adapted from the procedures listed by Bormuth (1970, p. 43).

meaning was not explicitly stated, paraphrased or partially answered (See Table 4).

Points were then totaled to achieve a raw score for the questioning assessment. Raw scores ranged from zero points to eight points. No specific arrangements were made for scoring students' responses of information which did not appear in the scoring guidelines. However, all unusual or inferential statements were recorded verbatim. To assess reliability of the scoring of the reader's response to comprehension questions, qualitative analysis of miscues and self-corrections, a set number of tapes were selected at random and scored by a person other than the researcher. The Pearson Product-Moment coefficient of correlation calculated between the researcher and the scorer was calculated at $r = .98$.

Design

A modified Latin square design was used to evaluate the influence of type and timing of sustaining feedback on low ability reading students. Figure 3, graphically represents this modified version.

According to Dayton (1970), a Latin square design deals with the number of different ways a treatment can be arranged in a square so that each treatment appears only once in each row and column. For this study a three by

Table 4

Scoring Procedure

<u>Points</u>	<u>Characteristics of Responses</u>
1	Stated explicitly using the same key words or synonyms as found in the author's statement.
	or
	Paraphrase which closely approximates the author's meaning.
.5	Partially answered question.
0	Author's meaning not explicitly stated, paraphrased or partially answered.

DAY	1-2	3-7	8-9	10-14	15-16	17-21	22-23
Group 1 (3)	BL ₁	A	BL ₂	B	BL ₃	C	BL ₄
Group 2 (3)	BL ₁	B	BL ₂	C	BL ₃	A	BL ₄
Group 3 (3)	BL ₁	C	BL ₂	A	BL ₃	B	BL ₄

BL_i = Baseline at time i

A = Graphophonemic

B = Graphophonemic

C = Semantic delayed

Figure 3

Modified Latin Square Design

three design was used and three treatment conditions were designated by the letters A, B, and C. It should be noted that each row and each column of the table represents a complete replication of the three treatment conditions. The baseline levels of this design are designated by the subscript numbers B_1 , B_2 , B_3 , and B_4 .

During baseline each student read orally the assigned passage. However, the students did not receive any feedback from the researcher when an error was made. Students were told to skip the unknown word and continue reading. During each treatment condition, graphophonemic immediate, graphophonemic delayed, and semantic delayed, each subject read orally the assigned passage. During these sessions each student received feedback from the researcher when a miscue was made that changed the author's intended meaning.

The design appears as in Figure 3; in Group one, ($N=3$), the order of the treatment conditions is A, B, and C; in Group two, ($N=3$), the order of the treatment is B, C, and A; and in Group three, ($N=3$), it is C, A, and B. The purpose of giving all three groups each of the treatments was to avoid serial effects.

Analysis of Data

A Latin square analysis of variance was used to: 1) examine the between group differences, 2) examine the

readers reaction to the the type and timing of treatment and
3) examine the sequence of treatment effects. The Latin
square analysis of variance also provided data on the
interaction of all three main effects.

CHAPTER IV

RESULTS

Introduction

This study was designed to examine the effects of teacher feedback on the oral reading performance of low ability second-grade readers.

In this chapter, relevant descriptive and statistical results are reported for the word recognition and comprehension performance of the readers. Evaluation of all reading miscues, made by the students, were compared to the expected response according to their graphic similarity and semantic acceptability. The miscues which the students corrected themselves, i.e., self-correction, were also evaluated. Scores were assigned to miscues by applying specific scoring criteria outlined in the procedures of the Reading Strategies Profile (Hutson & Gove, 1980). Scores were obtained for self-corrections by counting the number of miscues which the students corrected themselves. Finally, scores were assigned the comprehension performance based on the readers' ability to correctly answer eight textually explicit questions about the passage they read.

The oral reading performances of three groups of readers were examined for reading miscues under three different teacher feedback or treatment conditions. The conditions were graphophonemic immediate, graphophonemic delayed, and semantic delayed. In addition, the sequence of the treatment conditions were recorded and the overall reading performance was assessed. The sequence of the treatment conditions varied in the following manner: 1) graphophonemic immediate, graphophonemic delayed, and semantic delayed; 2) graphophonemic delayed, semantic delayed, and graphophonemic immediate; and 3) semantic delayed, graphophonemic immediate, and graphophonemic delayed. Four baseline conditions (no treatment) preceded, each treatment and followed the final treatment.

An analysis of variance, appropriate post hoc procedures, and t-test were used: 1) to determine if there were group differences based on the teacher feedback conditions, 2) to determine if the readers' reacted to the type and timing of treatment differently, 3) to determine if there were significant differences among scores for the groups based on the treatment sequence, and 4) to determine if there were changes in the oral reading performance of the students from BL₁ to BL₄.

Word Recognition

Graphic Similarity

Miscues substituted by the readers for expected responses were compared in terms of graphic similarity. A high degree of graphic similarity shows strength in the use of letter or orthographic information for word identification. The Reading Strategies Profile (See Appendix C) was used to rate the relative success of the readers' use of the graphic system. This rating procedure uses a scoring criteria to note the extent of graphic similarity between the expected response and the miscue.

Twenty-five oral reading miscues of each reader were analyzed for graphic similarity. The range of scores is from 0 to 75. Table 5 indicates the means and standard deviations of the graphic similarity assessment for groups, one, two, and three for both baseline and treatment conditions. These means are graphically illustrated in Figure 4.

Research Question One. What is the influence of type and timing of teacher feedback on lower ability readers' oral reading performance as they form three treatment conditions? In examining the between group difference, Figure 1 shows that group three had higher mean scores,

Table 5
Means and Standard Deviations
for Graphic Similarity

	BL ₁	TRT ₁	BL ₂	TRT ₂	BL ₃	TRT ₃	BL ₄
		(GI)		(GD)		(SD)	
Group 1	\bar{X} 34.8	42.6	38.3	41.0	43.3	44.2	40.1
	S 18.8	13.7	12.6	10.8	9.2	9.3	12.1
	N 3						
		(GD)		(SD)		(GI)	
Group 2	\bar{X} 37.6	40.4	37.1	43.6	44.5	38.5	42.1
	S 20.1	15.3	12.9	12.9	14.1	11.9	11.6
	N 3						
		(SD)		(GI)		(GD)	
Group 3	\bar{X} 54.5	57.3	57.0	56.3	57.1	51.4	43.1
	S 10.4	12.8	7.6	9.8	7.3	13.1	12.8
	N 3						

GI = Graphophonemic Immediate

GD = Graphophonemic Delayed

SD = Semantic Delayed

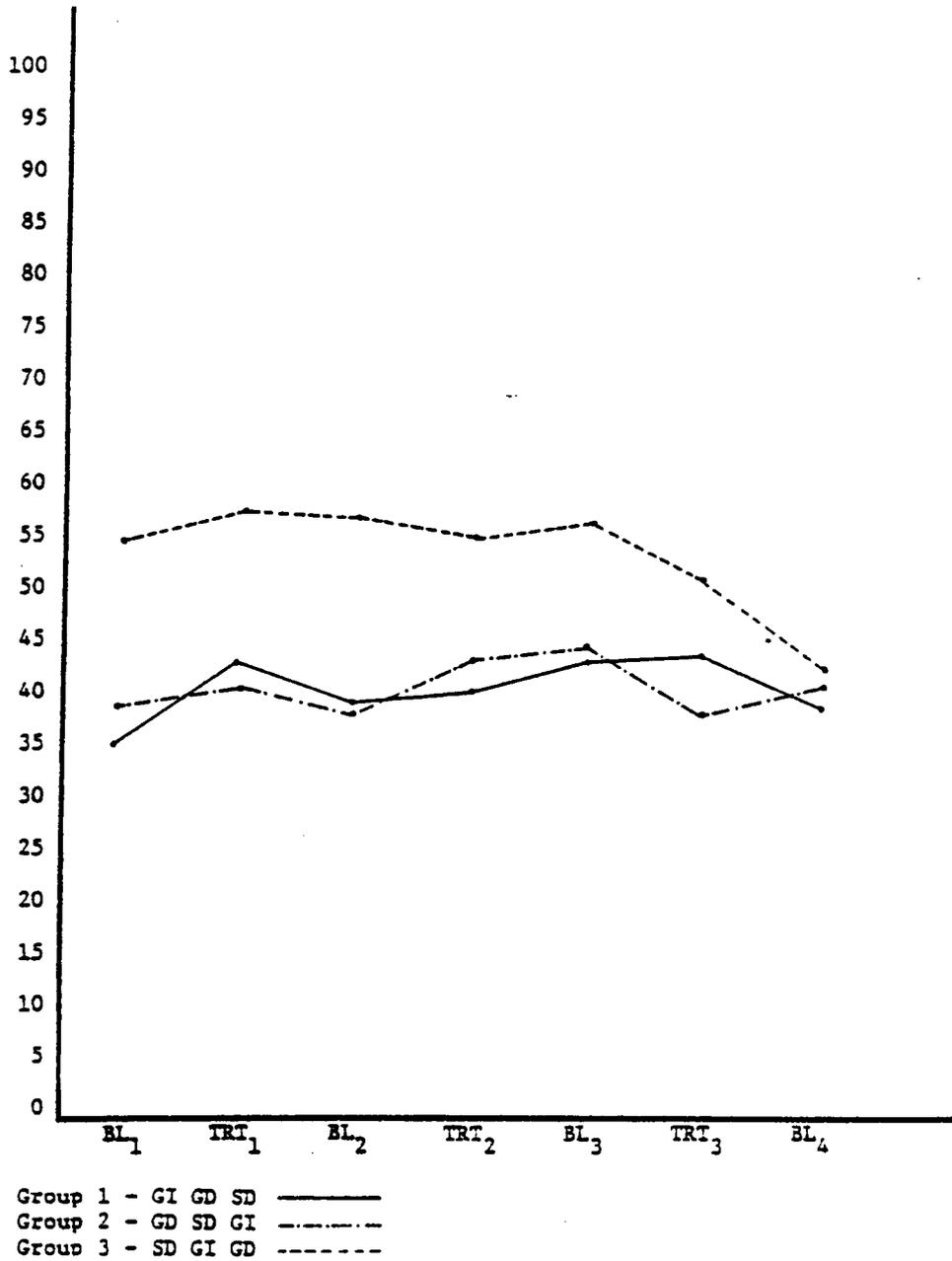


Figure 4
 Mean Scores of Graphic Similarity Dimension

(range from 43-57) for the graphic similarity assessment than groups one and two, for baseline or treatment condition. On an average, group three mean scores were relatively equal over the treatment period and consistently high. This pattern for group three of equal graphic similarity scores across treatments did not hold for BL₄. The other two groups had mean scores that were lower in magnitude. The range for group one was 33-44 and the range for group two was 37-42. Groups one and two appear to cluster together while group three appears to be noticeably different. However, as shown in Analysis of Variance, Table 6, no significant main effect for between group differences $F(2,18) = 1.21, p > .3196$ were found.

Although there were individual differences in graphic similarity scores, the trend was generally the same for all groups. The groups responded to the type and timing of teacher feedback differently. That is, there was no apparent consistency or pattern in graphic similarity scores for baseline or treatment conditions for either of the three groups. As shown in Figure 4, group one and three received graphophonemic immediate feedback in the first and second treatment applications respectively. These readers had higher graphic similarity scores than did group two, which received graphophonemic immediate feedback in the third treatment application. Analysis of Variance, Table 6

Table 6

Analysis of Variance for
Graphic Similarity

Source	df	SS	MS	F	P
Group	2	2700.074	1350.037	1.217	.3196
Treatment	2	6650.296	3325.148	2.998	.0740
Sequence	2	1767.186	883.593	.797	.4696
Residual	2	293.852	146.926	.132	.5947
Error	18	19961.333	63.303		
TOTAL	26	31372.740			

$p < .05$

verifies that the type and timing of teacher feedback, $F(2,18) = 2.9$, $p > .07$ were not statistically significant for the graphic similarity category. Finally, none of the three groups showed gains in the graphic similarity category from BL_1 to BL_4 . The obtained $t(34) = .2035$, $p > .05$ verifies this observation.

Research Question Two. Does the sequence of treatments affect the overall reading performance of low ability readers? Examination of Figure 4 suggests that there were no systematic treatment sequence effects for either of the three groups. For example, the first treatment sequence (GI, GD, SD) semantic delayed yielded the highest graphic similarity score, the second treatment sequence (GD, SD, GI) graphophonemic immediate yielded the highest score, and the third treatment sequence, (SD, GI, GD) graphophonemic delayed yielded the highest graphic similarity score. It should be noted that in each of the three treatment sequence applications, it was always group three that produced the highest graphic similarity score. Analysis of Variance, Table 6 indicates that the sequence of treatment, $F(2,18) = .79$, $p > .46$ was not statistically significant.

Semantic Acceptability

The semantic acceptability assessment involved measuring the reader's ability to produce understandable

oral reading responses that made sense in the text. Twenty-five oral reading miscues, of each reader were analyzed for semantic acceptability. The range of scores is 0 to 75 points (See Appendix C for scoring procedures). Table 7 depicts the means and standard deviations of the semantic acceptability assessment for groups one, two, and three for both baseline and treatment conditions. These means are graphically illustrated in Figure 5.

Research Question One. What is the influence of type and timing of teacher feedback on lower ability readers' oral reading performance? Examining the between group differences, as shown in Figure 5, group three again had consistently higher semantic acceptability scores than groups one and two across treatment application. However the between group differences $F(2,18) = 0.21, p > .6761$ were not statistically significant according to analysis of variance procedures (See Analysis of Variance Summary, Table 8). On the other hand, notable within group differences were apparent with regards to the readers' reaction to the type and timing of treatment (graphophonemic immediate, or graphophonemic delayed, or semantic delayed). For each of the three groups, semantic delayed always produced the highest semantic acceptability score. Analysis of Variance, Table 8 verifies that the type and timing of teacher feedback, $F(2,18) = 7.33, p < .004$ was statistically

Table 7

Means and Standard Deviations
Semantic Acceptability Score

	BL ₁	TRT ₁	BL ₂	TRT ₂	BL ₃	TRT ₃	BL ₄
		(GI)		(GD)		(SD)	
Group 1	\bar{X} 26.5	30.9	22.6	29.3	29.5	36.0	22.0
	S 19.8	16.7	17.1	17.4	9.7	16.8	14.2
	N 3						
		(GD)		(SD)		(GI)	
Group 2	\bar{X} 32.5	30.4	26.1	30.8	34.0	28.0	27.0
	S 20.6	18.4	15.3	19.8	17.4	15.2	16.5
	N 3						
		(SD)		(GI)		(GD)	
Group 3	\bar{X} 54.3	54.9	50.6	53.4	57.8	50.8	39.3
	S 12.6	13.0	9.0	11.1	7.4	16.9	16.9
	N 3						

GI = Graphophonemic Immediate

GD = Graphophonemic Delayed

SD = Semantic Delayed

Table 8
 Analysis of Variance for
 Semantic Acceptability

Source	df	SS	MS	F	P
Group	2	669.852	334.926	0.21	.6761
Treatment	2	23025.852	11512.926	7.33	.004*
Sequence	2	2097.852	1048.926	0.66	.5283
Residual	2	720.073	360.036	0.22	.6823
Error	18	28242.666	1569.37		
TOTAL	26				

* $p < .05$

significant. Since the readers have similar profiles it is safe to assume that the test of significance reflects only treatment effects.

Research Question Two. Does the sequence of treatments affect the overall reading performance of low ability readers? As suggested in Figure 5, there were no treatment sequence effects for either of the three groups. Figure 5 indicates that there was no apparent consistency or pattern in semantic acceptability scores for baseline or treatment conditions. As in the graphic similarity assessment (GI, GD, SD) semantic delayed yielded the highest semantic acceptability score; the second treatment sequence (GD, SD, GI) graphophonemic immediate yielded the highest score; and the third treatment sequence (SD, GI, GD) graphophonemic delayed yield the highest semantic acceptability score. In addition, group three always produced the highest semantic acceptability score. Analysis of Variance, Table 8 verifies that the treatment sequence effects, $F(2,18) = 0.669$, $p > .5283$ was not statistically significant.

Finally, the obtained $t(34) = 1.279$, $p < .05$ indicates that there was clearly an increase in semantic acceptability scores by the readers' from BL_1 to BL_4 .

Self-Corrections

A reader's ability to correct miscues indicates that the student reading the passage was not satisfied with his/her original response. Table 9 provides the combined total of the number of corrections that were either teacher prompted or self-initiated by the readers during baseline and treatment conditions for each of the three groups. However, this analysis reports only the findings on the correction of miscues that were initiated by the readers. Table 10 depicts the percentage of miscues that were corrected during baseline and treatment conditions. The means and standard deviations are presented in Table 11.

Research Question One. What is the influence of type and timing of teacher feedback on lower ability readers' oral reading performance as they form three treatment conditions? Examination of Figure 6 graphically illustrates the between group differences for the self-correction assessment for each group. The groups are somewhat similar in their overall self-correction performance. The analysis of variance confirmed this observation as it revealed no significant difference $F(2,18) = 2.931, p > .07$ (see Analysis of Variance, Table 12).

Figure 6 also indicates that the readers apparently reacted to the type and timing of treatment differently. In all three groups, graphophonemic delayed and semantic

Table 9

Total Number of Teacher Prompted and
Self-Initiated Corrections

	SC BL ₁ -BL ₄	SC TRT ₁ -TRT ₃	TPC TRT ₁ -TRT ₃	Total
Group 1	139	236	117	552
Group 2	147	268	135	550
Group 3	82	132	82	296

SC = Self-Corrections

BL = Baseline

TRT = Treatment

TPC = Teacher-Prompted Corrections

Table 10

Percent of Self-Initiated and
Teacher Prompted Miscues

	BL ₁	TRT ₁	BL ₂	TRT ₂	BL ₃	TRT ₃	BL ₄
<u>Group 1</u>							
Total Percent Corrected		49.6		53.3		50.3	
Percent of SIC	24.32	16.5	24.13	31.4	20.33	39.9	50
Percent of TPC		33.08		21.9		10.46	
<u>Group 2</u>							
Total Percent Corrected		55.9		44.19		54.6	72
Percent of SIC	30.55	34.3	30.0	34.08	31.42	34.28	39.13
Percent of TPC		21.6		10.11		20.35	
<u>Group 3</u>							
Total Percent Corrected		37.12		54.07		55.42	
Percent of SIC	12.30	23.48	41.81	20.74	28.84	43.9	38.70
Percent of TPC		13.63		33.3		11.44	

SIC = Student Initiated Corrections
TPC = Teacher Prompted Corrections

Table 11
Means and Standard Deviations
for Self-Initiated Corrections

	BL ₁	TRT ₁	BL ₂	TRT ₂	BL ₃	TRT ₃	BL ₄
		(GI)		(GD)		(SD)	
Group 1	\bar{X} 26.7	19.0	26.2	33.7	20.5	44.6	50.9
	S 11.1	13.9	18.3	21.0	13.1	19.6	12.8
	N 3						
		(GD)		(SD)		(GI)	
Group 2	\bar{X} 28.5	32.6	30.3	34.9	30.1	37.1	35.1
	S 18.8	12.2	9.5	22.6	11.6	21.6	16.5
	N 3						
		(SD)		(GI)		(GD)	
Group 3	\bar{X} 13.6	25.2	37.1	22.1	31.3	47.0	42.1
	S 13.8	17.5	11.6	15.9	11.3	22.9	17.5
	N 3						

GI = Graphophonemic Immediate

GD = Graphophonemic Delayed

SD = Semantic Delayed

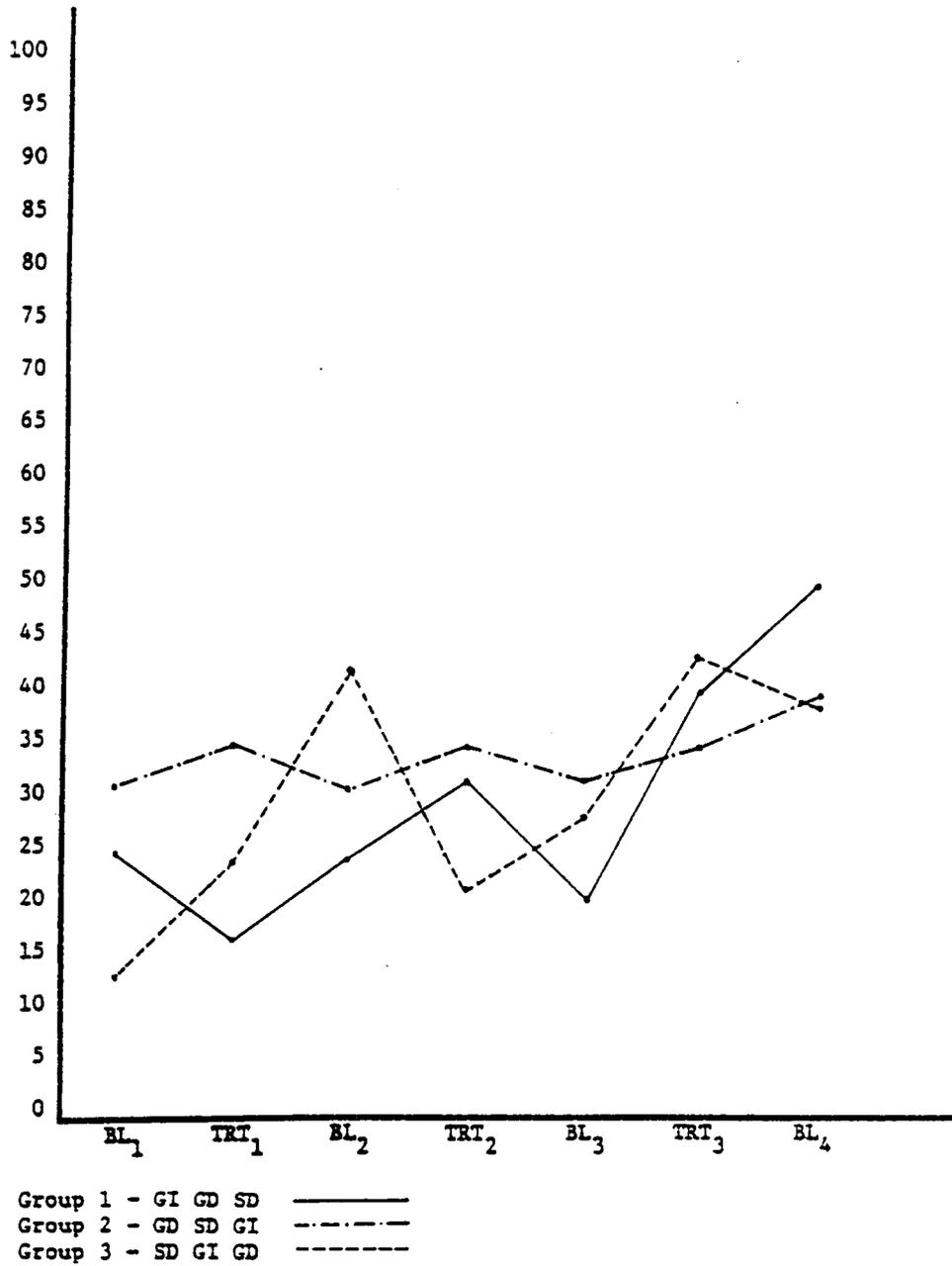


Figure 6
 Percent of Self-Initiated Corrections

Table 12
Analysis of Variance
for Self-Corrections

Source	df	SS	MS	F	P
Group	2	371.	185.5103	2.931	.07
Treatment	2	219.184	109.592	1.731	.2042
Sequence	2	68.596	34.298	.542	.5906
Residual	2	256.330	128.165	2.025	.1598
Error	18	1139.456	53.303		
TOTAL	26				

$p < .05$

delayed yielded higher percentages of self-corrections as compared to graphophonemic immediate. For example, group three, (SD, GI, GD) increased from 12% at BL₁ to 23% and 43% during delayed conditions and group one (GI, GD, SD) increased from 24% at BL₁ to 31% and 39% under delayed conditions. However, the formal analysis of type and timing effects did not show statistical significance, $F(2,18) = 1.731$, $p > .2042$.

Research Question Two. Does the sequence of treatment affect the overall performance of lower ability readers? Figure 6 suggests that there were no overall treatment sequence effects. The analysis of variance confirms that there were no statistically significant differences regarding the sequence of treatment application, $F(2,18) = .542$, $p > .5906$.

Use of the correction process increased from BL₁ to BL₄ for each group. A t-test was conducted on the percent of self-corrections, made by readers' from BL₁ to BL₄, to see if there was an increase in the successful use of the correction process. The obtained $t(34) = 3.7$ $p < .05$ indicates that there was clearly an increase in the percentage of miscues corrected by the readers' from BL₁ to BL₄. Group one made a 7.5 percent increase in corrected miscues. Group two made a 6 percent increase in corrected miscues and group three made a 30 percent increase in corrected miscues.

Comprehension

The comprehension assessment task involved the readers answering eight textually explicit questions following each passage. These means and standard deviations are summarized in Table 13. The means are graphically illustrated in Figure 7.

Research Question One. What is the influence of type and timing of teacher feedback on lower ability readers oral reading performance as they form three treatment conditions? In examining the between group differences, Figure 7 indicates that there was a difference in the mean number of questions answered by each group. The overall mean number of questions answered by group one was 5.23, the overall mean number of questions answered by group two was 5.96, and the overall mean number of questions answered by group three was 6.8. Analysis of Variance Table 14 verifies that there was a statistically significant main effect for between group differences, $F(2,18) = 8.94, p < .002$.

As suggested in Figure 7, the readers reacted to the type and timing of teacher feedback differently. For groups one and three, semantic delayed yielded the highest comprehension performance and for group two, graphophonemic immediate yielded the highest comprehension performance. Since groups one and two produced their highest

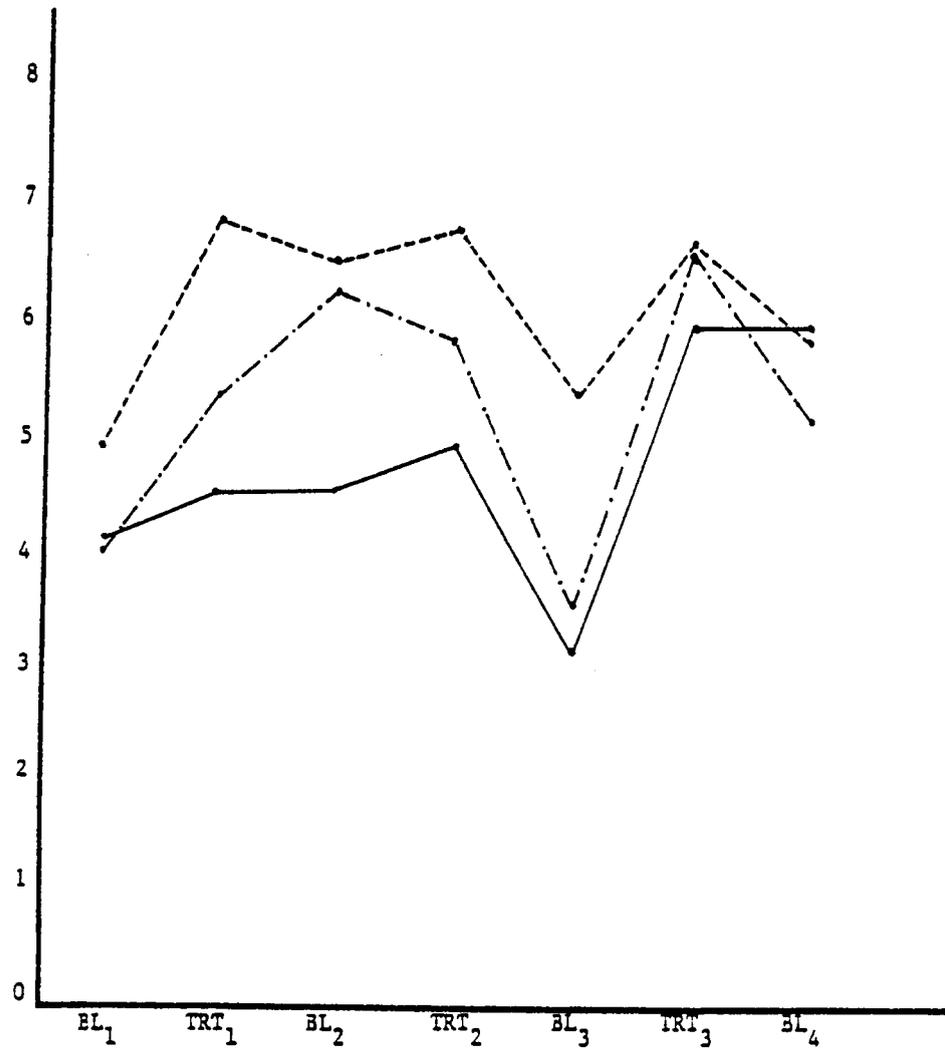
Table 13
Means and Standard Deviations
for Correctly Answered Questions

	BL ₁	TRT ₁	BL ₂	TRT ₂	BL ₃	TRT ₃	BL ₄
		(GI)		(GD)		(SD)	
Group 1	\bar{X} 4.2	4.6	4.6	5.0	3.2	6.0	6.0
	S 1.3	2.3	1.3	1.5	1.4	1.2	1.3
	N 3						
		(GD)		(SD)		(GI)	
Group 2	\bar{X} 4.1	5.4	6.3	5.9	3.6	6.6	5.2
	S 1.7	1.7	1.6	1.6	1.5	1.2	1.6
	N 3						
		(SD)		(GI)		(GD)	
Group 3	\bar{X} 5.0	6.9	6.5	6.8	5.4	6.7	5.9
	S 1.1	1.5	0.8	0.7	1.0	1.2	1.4
	N 3						

GI = Graphophonemic Immediate

GD = Graphophonemic Delayed

SD = Semantic Delayed



Group 1 - GI GD SD ———

Group 2 - GD SD GI - · - · - ·

Group 3 - SD GI GD - - - - -

Figure 7
Correctly Answered Questions

Table 14
 Analysis of Variance for
 Correctly Answered Questions

Source	df	SS	MS	F	P
Group	2	195.723	97.86	8.94908	.002*
Treatment	2	95.723	47.86	4.37669	.0277*
Sequence	2	28.167	14.08	1.28790	.3001
Residual	2	76.22	38.11	3.48507	.05*
Error	18	196.834	10.93		
TOTAL	26	592.667			

* $p < .05$

comprehension score during the last treatment application, this indicates that these two groups made greater gain scores across the three treatment conditions than group three. Group three's comprehension performance was relatively the same over the treatment period and was consistently very high. Analysis of variance confirms that there was a significant main effect for type and timing of teacher feedback, $F(2,18) = 4.37$, $p < .02$, which says that the treatment themselves were reacted to differently by the groups. When the Newman-Keuls test was used to test all pairwise contrasts on a post hoc basis, the only pair found significant was semantic delayed with graphophonemic delayed (2.27). The other pairs (SD with GI and GI with GD) produced coefficients near 1.0. These results indicated that semantic delayed was the more influential treatment.

Research Question Two. Does the sequence of treatment affect the overall reading performance of low ability readers? The sequence of treatment did not affect readers' performance in the comprehension assessment. Although readers tended to have higher comprehension scores during treatment conditions than baseline regardless of the treatment sequence. The analysis of variance yielded no significant difference regarding the sequence of treatments on the comprehension performance, $F(2,18) = 1.28$, $p > .3001$.

Because the treatments were not uniformly significant there was a significant residual, $F, (2,18) = 3.48, p < .05$. This residual is the unexplained variance due to the interaction of the between group difference, the type and timing of teacher feedback, and the sequence of treatment applications. In other words, this residual implies that some inconsistencies happen across groups and across treatments.

A t-test was conducted on the readers' performance from BL₁ to BL₄ to see if there was an increase in comprehension. The obtained $t(34) = 2.59 p < .05$ indicates that there was clearly an increase in comprehension performance from BL₁ to BL₄. This increase was particularly reflected in the performance of groups one and two.

Summary

Analysis of these data indicated no significant differences in the scores obtained by each of the three groups in the categories of graphic similarity and semantic acceptability. Although there were no treatment effects for graphic similarity the semantic acceptability analysis did indicate that the semantic delayed always produced the highest semantic acceptability score. In addition, results indicated no significant differences in the percentage of miscues corrected by each of the three groups during

treatment. However, all three groups increased in the use of the correction process from BL₁ to BL₄. No systematic sequence of treatment effects were evident for either word recognition or comprehension measures. Finally, a comparison of the three treatment conditions indicated that the semantic delayed condition influenced comprehension more positively than did graphophonemic delayed and graphophonemic immediate.

CHAPTER V

DISCUSSION

In this chapter the findings of the study are discussed with respect to the two research questions which represent the effects created by the type and timing of sustained feedback and any sequence effects that may have been the result of the application of treatment. Finally, conclusions are provided and suggestions for further research.

Research Question One

What is the influence of type and timing of teacher feedback on the oral reading performance of low ability readers?

Word Recognition. The influence of type and timing on the readers' word recognition in this study provides a mixed picture. For the graphic similarity dimension of word recognition, no consistent effect was found for any treatment. While one group had a consistently higher graphic similarity score, there were no within group differences due to treatment. These results are in agreement with those of Pany, McCoy and Peters (1981) and

Niles (1979) which showed little impact from sustaining feedback or graphic similarity scores of younger readers. Niles, Graham and Winstead (1977) on the other hand, had demonstrated effects with older readers (fourth graders). They found that those readers who received graphophonic prompts yielded higher graphic similarity scores. The researchers argued that the prompt focused the readers attention on this cue system and that the readers' responses reflected these attention processes.

Readers have three major cue systems available when processing text; graphophonic, syntactic, and semantic. These cue systems are processed simultaneously if the reader is to be successful. The objective of sustaining feedback is to encourage the reader to use these cues. Thus, if the teacher's feedback is cognitively encouraging the reader to pay attention to a particular cue source, then this emphasis should be reflected in the quality of the response. Such was not the case with the second-grade readers in this study. The graphophonic treatments did not yield the expected higher graphic similarity scores. One possible explanation for this finding is that these readers were already devoting high levels of attention to the graphophonic cue system because of their developmental stage in reading (Biemiller, 1970, Weber, 1970 and Chall, 1984) and their present instructional program which likely

emphasized decoding (Allington, 1978). This latter point also helps explain why the semantic feedback also did not significantly divert the readers' attention away from a decoding set and produce lower graphic similarity scores. These participants were still learning to decode, thus their performance and instructional program reflected their cognitive needs.

Indirectly, the results for semantic acceptability lend support for the prior explanation of a ceiling effect for graphic similarity and support the notion that sustaining teacher feedback does effect the reader's performance. In this study, the semantic delayed condition produced the highest semantic acceptability score for the readers. This finding indicates that the prompt "Does that make sense?" did encourage readers to respond accordingly; their unexpected responses were more meaningful with respect to the author's intended meaning. The type of the teacher's prompt and the time to reflect using the semantic cue system as a guide raised the probability that the readers would produce a more sensible response than if they were asked to pay more attention to graphophonic cues. These findings are in agreement with Niles (1979) and Niles, Graham and Winstead (1977) who found that fourth graders who received semantic prompts were more likely to produce higher semantic acceptability scores for their miscues. Pany, McCoy and

Peters (1981) did not find semantic effects for their remedial readers. However, these remedial readers were receiving their feedback treatment as part of an instructional program that was heavily decoding oriented (Niles, 1984). While the second grade readers in this study were receiving a decoding emphasis in their instructional material there was still receiving instruction in using all three language cue systems. Also, the treatment in this study did not use the child's reading teacher as the instructor and was clearly separate from the daily instructional program.

Self-correcting behavior was not consistently related to the type and timing of the sustaining feedback. As expected the delayed feedback conditions allowed for more reader self-correction than for immediate feedback. Providing readers with more think time allows them the opportunity for using reading strategies to solve their own reading problems (Johnson and Afflerback, 1983). Immediate corrections for readers do not provide enough time to process the textual clues (Hoffman, O'Neal and Clements, 1982).

The readers in this study demonstrated that they would correct their miscues if given the opportunity by the teacher. Each group increased their tendency to correct over the course of the study. This tendency seems to

suggest that the readers learned that correction or monitoring was an important feature of their reading situation. Interestingly, the third group which had the highest scores on graphic and semantic similarity scores and comprehension reflected the greatest gain in correction percentage. They increased from 6% in baseline one to 30% in baseline four. One could argue that they were the best readers and didn't need to correct more. However, it must be underscored that these readers were among the least proficient in their class. Thus, they were the best among the worst. Perhaps the sustaining feedback provided a model for these "good" flow ability readers to improve monitoring of their own reading. The readers' comments during the treatment corroborate this view. By the end of the treatment it was not unusual to have a reader say to the examiner, "Wait, wait I can get it myself."

Comprehension. Two effects were most prominent for type and timing on comprehension. First, the semantic delayed was most influential for groups one and two. Group three had consistently high comprehension scores and did not reflect any differential treatment effects. Group three did, however, begin their treatment with the influential semantic delayed condition. Whether this was a factor in their consistently high performance cannot be determined within the scope of this study.

The positive influence of the semantic delayed prompt is in agreement with studies by Pehresson (1974) and Niles, Graham and Winstead (1977). However, these findings do not substantiate those of Niles (1979) and Pany, McCoy and Peters (1981) who did not find any effects for prompting on comprehension.

The second prominent finding that the readers tended to produce higher comprehension scores during treatment than during baseline indicates that teacher prompting or the potential of teacher prompting may increase the information pick-up of the reader. The prompting process may act as an attention director for the reader. Thus, if the teacher prompts a reader s/he naturally focuses more attention to that point in the text. If that point happens to be tested in the comprehension question the reader may benefit indirectly. This may be particularly true in the case of semantic prompts because the prompt and the testing mode are more congruent. That is, they are both semantically based and would allow for transfer appropriate processing (Bransford and Franks, 1977).

Research Question Two

Does the sequence of treatment affect the overall performance of low ability readers.

No systematic treatment effects were evident for either word recognition or comprehension measures. The point mentioned above that comprehension was greater in all semantic delayed as well as graphophonic immediate treatment conditions does deserve further elaboration. A case has been made in the past (e.g. Niles, Graham and Winstead, 1977) that prompting, especially immediate graphophonic, can be an interference for a reader's comprehension. It was not in this study. However, the readers in this study were second graders who are used to such a strategy in their daily instruction (Hoffman, 1983). Therefore, they may not be as bothered by this strategy as more mature readers who receive different instructional strategies and have a meaning centered set for reading.

Conclusions

The following conclusions were drawn from the findings of this study.

First, the findings of this study offer some support to the position that timing is a critical factor influencing the performance of the reader to apply self-correction strategies. Delayed feedback shows up in two treatments (GD, SD) as potentially valuable feedback strategies. Johnson and Afflerback (1983) suggest that delayed teacher feedback provides the reader with more of an opportunity for think time to engage in self-corrections.

Second, the readers produced higher scores of semantically acceptable structures in the semantic delayed condition over the other treatment conditions (GI, GD). Thus, it was concluded that the semantic delayed conditions allowed the readers time to produce structures or language that make sense according to his/her intuitive knowledge of language and the fact that this condition also emphasize reading for meaning.

Third, since low ability readers tend to continue reading after a miscue which substantially changes the author's meaning, it is unclear whether this is a strategy that they do not have or one which the teacher will not allow them to exercise.

Fourth, timing seems to be a critical factor influencing the ability of and willingness of the low ability reader to apply certain strategies.

Fifth, teacher feedback, particularly semantic delayed, can positively influence the comprehension performance of readers.

Suggestions for Further Research

A number of suggestions for further research emerged from this study. These suggestions are based on the results from the methodology and findings of the present study.

First, extend length of treatment time. This would possibly give a broader and more accurate picture, thus enabling strong generalizations about the predicted outcomes.

Second, the comprehension assessment could be redesigned to account for inferential and prior knowledge information rather than just textually explicit information. This would possibly result in a more elaborated account of the students' ability to comprehend the author's meaning of the text.

Third, this study was not designed to establish a "best method" of providing teacher feedback. However, the results of the present study imply that semantic delayed was the most influential treatment for comprehension performance. Therefore, a study could be designed to assess a "best method" of providing teacher feedback.

Finally, if semantic delayed is shown to be the best method to positively influence comprehension, a study designed to determine if low ability readers improve their comprehension performance over time with this treatment (semantic delayed), may show that readers are able to monitor their comprehension of the author's meaning through the self-correction process.

Summary

Research to date seems to indicate that there is evidence that teachers use different reading strategies with different students. For example, Hoffman and Kugle (1981) reported that low ability readers seem to receive more graphophonic (letter sound) type of feedback as compared to semantic feedback (contextual). It has also been suggested that it is more likely for teachers to interrupt poor readers who miscue when reading than good readers (e.g. Allington, 1980, 1983). A number of research findings (Pehrsson, 1974; Niles, Graham, & Winstead, 1977; Pany, McCoy & Peters, 1981; and Niles, 1979) have suggested that type and timing of teacher feedback affect the reading performance of students differently.

From the studies cited above, teacher feedback during oral reading has been shown to affect various student behaviors such as word recognition errors or miscues (e.g., Niles, et.al, 1977), self-corrections (e.g., McNaughton & Glynn, 1981) and comprehension (e.g, Pehrsson, 1974) during oral reading. In most of these studies, average readers were used or poor readers were compared to good readers. The present study represents an investigation of the effects of sustaining feedback on the oral reading performance of low ability readers. Instead of being compared to good

readers, various types of sustaining feedback were used within a group of low ability readers.

Specifically, a modified Latin Square design was used to investigate how type (graphophonic and semantic) and timing (immediate and delayed) influence word recognition and comprehension of performance.

A sample of nine low ability second-grade readers were selected and randomly assigned to one of three treatment sequence conditions. Each group received graphophonemic immediate prompts (the examiner immediately calls the readers attention to the deviation by pointing to the word and prompting, "Look closely at the letters in this word."); graphophonemic delayed (the examiner prompts as above but after the reader has completed reading the sentence); and semantic delayed prompts (the examiner prompts the reader by asking "Does that make sense?" after the reader has completed reading the sentence). Each treatment condition was conducted for approximately five, fifteen minute reading sessions over a three-week period. The four baselines had two sessions each. The dependent measures were literal comprehension and qualitative dimension of word recognition, graphic similarity, semantic acceptability, and self-corrections.

Results indicted no significant differences in the scores obtained by each of the three groups in the

categories of graphic similarity and semantic acceptability. Although there were no treatment effects for graphic similarity the semantic acceptability analysis did indicate that semantic delayed always produced the highest semantic acceptability score. In addition, results indicated no significant differences in the percentages of miscue corrected by each of the three groups. However, all three groups increased in the use of the correction process from BL₁, to BL₄. No systematic sequence of treatment effects were evident for either word recognition or comprehension. Finally, the semantic delayed condition influenced comprehension more positively than did the graphophonemic immediate and graphophonemic delayed condition.

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APPENDICES

Appendix A

601-A Washington St.
Blacksburg, VA 24060

Dear Parents:

I am a Doctoral Candidate in Curriculum and Instruction at Virginia Tech. Presently, I'm conducting a research investigation designed to examine ways of helping young readers. In order to conduct my dissertation research I need to identify nine second grade students to use as participants. Your permission to conduct my research with your child (children) would be greatly appreciated.

As part of my research, I will need access to information about students' reading performance. Of course, this information will be held in strictest confidence. No individual student will be identified by name in the final report, nor will any participant be deprived from any class instructional time. Furthermore, if you wish to receive a summary of the final report, it would be my pleasure to forward a copy to you.

The research will require me to work with your child for 10-15 minutes per day beginning September 27 through November 4, 1984. If at any time during this period you wish to withdraw your child from the study, you may certainly do so. If, now or in the future, you have questions concerning the procedures I will be happy to answer them.

If you wish to permit your child to participate, please sign the permission slip below and return it to your child's teacher by Monday, September 24, 1984.

Sincerest thanks for your help in this very important research.

Sincerely,

Treana Adkins

Please check one of the following.

Permission is granted for my child to participate in the study.

Permission is not granted for my child to participate in the study.

Parent(s) Signature

Date

Appendix C

Scoring Criteria for Reading Strategies Profile

Graphophonemic Dimension

<u>Rating</u>	<u>Criteria</u>
0	The response <u>does not</u> begin with the same first letter <u>and</u> the response <u>does not</u> have one-half or more letters overlapping with those in the printed word.
1	The response begins with the same first letter <u>or</u> the response has one-half or more letters overlapping with those in the printed word.
2	The response begins with the same first letter <u>and</u> the response has one-half or more letters overlapping with those in the printed word.

Semantic Dimension

<u>Rating</u>	<u>Criteria</u>
0	The response <u>does not</u> make sense in the phrase.
1	The response makes sense in the phrase, <u>but</u> the meaning of the sentence is changed, i.e. the meaning of the phrase with the response makes sense but <u>is not synonymous</u> with the phrase in print.
2	The response does not change the meaning of the phrase, i.e. the phrase with the response is synonymous with the phrase in print.

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THE INFLUENCE OF SUSTAINING FEEDBACK ON THE ORAL
READING PERFORMANCE OF LOW ABILITY READERS

by

Treana Adkins

(ABSTRACT)

The effects of teacher feedback on the reader's performance during oral reading have not been clearly delineated. This study was designed to investigate how two features of sustaining teacher feedback, type (graphophonemic and semantic) and timing (immediate and delayed) influence word recognition and comprehension for low ability second-grade readers.

A sample of 9 low ability second-grade readers were selected and randomly assigned to one of 3 treatment sequence conditions. Each group received graphophonemic immediate prompts (The teacher immediately calls the readers attention to the deviation by pointing to the word and prompting, "Look closely at the letters in the word."); graphophonemic delayed prompts (The teacher prompts as above but after the reader has completed reading the sentence or a complete thought within a complex sentence.); and semantic delayed prompts (The teacher prompts the reader by asking, "Does that make sense?" after the reader has completed reading the sentence). A single-subject format (eg. A B A C

A D A) was incorporated by using a Latin Square design for presenting the three treatment conditions to all three groups. On each of the twenty-three days the students orally read a different passage. Each treatment condition was conducted for approximately five fifteen minute reading sessions over a three week period. The four baselines had two sessions each. The dependent measures were literal comprehension and qualitative dimensions of word recognition, graphic similarity, semantic acceptability, and self-corrections.

Results indicated that the treatments did not differentially affect the graphic similarity of the readers' responses, although the semantic delayed condition did encourage responses which were higher in semantic acceptability. In addition, the semantic delayed conditions influenced comprehension more positively than did the other conditions.