All first, second, and third grade teachers in one rural southwestern school district were observed to find out (1) what they were doing while their reading groups read stories, (2) whether they changed their teaching strategies when they changed reading groups, and (3) whether their strategies during story reading changed from grade to grade. Reading materials included Distar Fast Cycle, Distar Reading II, and basal readers. Observations were coded for the number of reading comprehension instruction statements, text-explicit questions, scriptal questions, decoding errors, comprehension errors, and general management. Findings revealed that teachers asked more factual questions of their lower grade and lower performing students, but reversed this pattern for inferential questions. First grade teachers asked fewer than half the number of text implicit questions that third grade teachers asked. Third grade teachers asked from six to ten times the number of scriptal questions that first grade teachers asked. The number of reading errors the groups made held fairly constant from first grade through third grade. The biggest change in feedback took place after first grade, with teachers no longer sounding out corrections. Finally, time for story reading increased from about 7.5 minutes in first grade to almost 10.5 minutes in third grade. (HOD)
Teachers' Comprehension Questions:

What Functions Might They Serve?

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Durkin's (1978-1979) observational study drew considerable attention to teachers' routines for teaching reading and social studies. Durkin defined comprehension instruction as:

Teacher does/says something to help children understand or work out the meaning of more than a single, isolated word. (Durkin, 1978-1979, p. 488)

and then she observed classroom teachers for 4,469 minutes. She found only 28 minutes of comprehension instruction that matched her definition. The very small percentage of time devoted to comprehension instruction led others to raise important questions about how children learn to comprehend what they read if so little classroom time is devoted to comprehension instruction. In response to Durkin's findings of less than one percent of reading and social studies time devoted to comprehension instruction, Hodges (1980) set forth three hypotheses. Hodges' (1980) explanations were: (1) as children mature, they develop naturally the ability to understand what they read, (2) instruction in other areas somehow transfers to reading and thus children learn to comprehend what they read, or (3) "comprehension instruction includes many components which are not included in Durkin's definition" (Hodges, 1980, p. 299).

The purpose of this study was to explore Hodges' third explanation of how children learn to comprehend what they read by observing teachers in a school district where on the basis of the students' backgrounds one would predict district-wide reading performance at about the 20th percentile, but where in fact students' reading comprehension performance has improved consistently and significantly for more than a decade. At the time of this study, almost 90 percent of the district's second graders and about 83 percent of the third graders read at or above grade level in Total Reading on the Stanford Achievement Test (1973) despite the fact that "seventy-eight percent of the students come from homes where Spanish has a
dominating influence. A majority (52%) are Chapter I eligible" (Meyer, 1983, p. 47).

The primary reasons for conducting this study were to find out: (1) What the teachers in this effective school district are doing while their reading groups read stories? (2) Do teachers change their teaching strategies when they change reading groups? In other words, do teachers alter their teaching strategies when they shift from their high to medium to low-performing groups? And (3), do teachers' strategies during story reading change from grade to grade?

While others have studied the short-term effects of various types of teaching routines during reading instruction (see Reynolds, Standiford, & Anderson, 1978; Hansen, 1981; or Raphael, 1981, for example), and still others have researched the effects of different kinds of teacher questions (Guszak, 1967; Goodlad, 1977), this study differs from those cited previously because of the clear discrepancy between the reading performance one would predict for the district and the performance the district achieves. Are these teachers doing anything different from the things observed by Durkin (1979) who found so little time devoted to comprehension instruction, or Mason and Osborn (Note 1) who found no change in text-level comprehension instruction from third grade to fourth grade, despite teachers' beliefs about what ought to occur during instruction in those grades. By linking long-term student achievement to these teaching behaviors we will be able to suggest the relationship between what these teachers do and the reading comprehension performance they achieve.

Method

A general report of this district's strategies to improve students' reading comprehension achievement appears elsewhere (Meyer, 1983), so only
a cursory description of the district's evolving reading program will follow.

Setting. Prior to 1966, this rural southwestern district used meaning-emphasis basal readers for reading instruction. The results with this approach were that less than thirty percent of the district's second graders and just over twenty percent (21.3%) of the district's third graders read at or above grade level. These results reflect almost exactly the nationwide reading performance of children of comparable socioeconomic status (SES) (Ozenne, et al., 1976; Molitor, Watkin, Napier, & Proper, 1977; National Assessment of Educational Progress, 1979).

In 1969, the district adopted the Direct Instruction Model from the University of Oregon in order to participate as a federally funded Follow Through site. The adoption of the Direct Instruction Model brought with it (1) the use of carefully designed teaching materials, (2) more small-group teaching time, (3) active student responses, (4) emphasis on correction procedures, (5) criterion-referenced testing of students in Basic Skills, and (6) increased time on task. Since 1969, the district has refined the University of Oregon's program to include accelerated decoding and language instruction paired with basal reading instruction from about mid first grade through third grade. From 1967-1980, each Follow Through classroom had a teacher and a paraprofessional aide. There were seven classes at each grade level at the time of this study. One teacher at each grade level had four homogeneously grouped reading groups. All other teachers for each grade level had three groups.

Materials. All first grade teachers used the Distar Fast Cycle as their decoding program. Most first grade reading groups completed this program in the first half of first grade. Upon completion of the Fast
Cycle, groups went into Distar Reading II and a basal reader. Groups continued instruction in a Distar reading program and a basal reader from midway through first grade, and all of second and third grade. Students began Distar Language II with its emphasis on teaching such language word skills as opposites, synonyms, and definitions; sentence skills such as making up questions, answering who, what, when, where, and why questions; and reasoning skills such as analogies, descriptions, to name just a few of the major areas taught. Students generally completed Language II and began Language III in second grade. They finished Distar Language III and began other Language Arts textbooks in third grade.

Subjects. All first, second, and third grade teachers and students from the school district participated in this study. Each teacher grouped his/her students homogeneously for reading instruction. The groups averaged eight to ten students each.

Procedure. While observing each teacher, I coded activities during the text-based (story reading) portion of the reading lesson. I also asked each teacher to audio-tape that lesson segment so that I could re-analyze my coding of the live observations at a later time. Using the Pearson and Johnson (1972) categories for teachers' questions, Durkin's 1978-79 definition for comprehension instruction, and other categories for student errors and teacher feedback, the coded variables were:

1. Number of reading comprehension instruction statements
2. Number of text-explicit (factual) questions
3. Number of text-implicit (inferential) questions
4. Number of scriptal questions (Questions students answer from their background knowledge)
5. Number of decoding errors (Words students misidentify)
6. Number of comprehension errors (Comprehension questions answered incorrectly)

7. Type of feedback teachers gave for:
   a. decoding errors
   b. comprehension errors
   c. general management

I also timed each story-reading segment.

A second person later coded 90 percent of the tapes. We reached inter-rater reliability of 85 percent for each teacher and each category.

Results

Reading Comprehension Instruction

I observed these 58 reading groups during story-reading for 772 minutes. I failed to hear one teacher question or command that matched Durkin's definition of reading comprehension instruction. All questions and directives fit Durkin's definition of assessment, so the results section should be considered from this perspective.

Reading Comprehension Assessment

Questions. Table 1 provides descriptive statistics for instructional groups at each grade level. At all three grade levels, one teacher had a fourth reading group. There was one combined first and second grade, thus explaining the number of groups in each grade. There are several distinct patterns in these data. In eight of the nine three-group clusters (when a cluster is defined as all high, medium, or low-performing groups at that grade level) for first, second, and third grade, the percentage of text explicit questions increases as the performance of the reading group decreases. The percentage of text implicit questions increases in the opposite direction for eight of the nine group clusters. In other words,
teachers asked higher percentages of text implicit questions to higher performing groups, and higher percentages of text-explicit (factual) questions to low-performing groups.

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Insert Table 1 about here.

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The pattern for scriptal questions—those questions students must answer from prior knowledge—is different for each group cluster. For the first grade group clusters, teachers asked their highest-performing groups a little over three scriptal questions (3.25) per story. They asked their lowest-performing groups two and a half times the number of scriptal questions that they asked their middle groups. The second grade teachers asked their lowest-performing groups over twice the number of scriptal questions they asked their middle high-performing groups. Second grade teachers asked three to eight times the number of scriptal questions that first grade teachers asked.

The third grade teachers present a different picture. These teachers asked their highest-performing groups the most scriptal questions, though they asked only slightly fewer scriptal questions of their middle-performing groups. Third grade teachers asked their lowest performing groups about half the number of scriptal questions that they asked their high-performing groups.

Vocabulary. These are means and standard deviations for the number of vocabulary questions teachers asked. In first grade and third grade, teachers questioned their highest-performing groups most frequently about vocabulary, but in second grade, teachers asked more vocabulary questions of their lowest-performing groups than either of their other groups. Third
grade teachers asked their lowest-performing groups more vocabulary questions than the, asked their middle performing groups, and second-grade teachers averaged fewest vocabulary questions to their highest performing groups.

The overall number of vocabulary questions asked increased substantially from first grade to third grade. First grade group 1's (highest-performing groups) averaged less than one vocabulary question per story, whereas third grade group 1's averaged five and a half questions. The comparison of the group 3's (lowest-performing groups) is equally dramatic. Whereas first grade teachers averaged .33 vocabulary questions for their lowest-performing groups, third grade teachers averaged over four questions per group.

**Decoding errors.** In all but first grade, middle-performing and low-performing group clusters made more decoding errors than the highest-performing groups. In second and third grades, lowest-performing groups averaged two-three times the number of errors that the highest-performing groups averaged. In first grade, however, the highest performing groups averaged 6.75 errors (SD = 8.24) whereas the middle groups averaged less than 4 errors (mean = 3.86; SD = 2.16). This is a somewhat surprising difference, though the large standard deviation for the highest-performing groups illustrates substantial differences between groups in the number of decoding errors made by the groups.

**Story-reading time, type of feedback, and praise.** In addition to comparing the percentages of text explicit (factual), text implicit (inferential), and scriptal (prior knowledge) questions as well as the number of vocabulary words isolated, I also measured the length of the story-reading session, the kind of feedback the teachers gave their groups,
and the type of praise teachers gave to their students. These means and standard deviations appear in Table 2.

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Insert Table 2 about here.

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**Time.** First grade groups spent a little over seven minutes story reading and the lowest-performing groups took longer to complete their story than the high and middle-performing groups. Second grade group 1's averaged almost nine minutes, but second grade group 2's averaged almost eleven minutes. Group 3's averaged just over ten minutes to complete their stories. Third graders spent an average of over twelve minutes if they were in the high-performing group (group 1's), ten minutes if they were the middle-performing groups (group 2's), and just a bit over nine minutes reading if they were the lowest-performing groups.

**Feedback.** I also measured what kind of feedback the teachers gave when the students made decoding errors. I classified feedback as teacher guiding students back to context, simply telling the student(s) the correct word, or directing the students to sound out the word. The first grade teachers told their students the correct word over half the time (50%, 68%, 54%) regardless of the group's ability. The lowest-performing first grade groups sounded out a word about a quarter of the time while the other groups sounded out words less than half that often (about 12% and 11% of the time, respectively). Second grade teachers used sounding out a mere 2% of the time for their high-performing and middle-performing groups and not at all for their low-performing groups. Third grade teachers never had students sound words out.

From second grade into third grade, teachers increased the percentage of words they corrected by telling the students the correct word from over...
three fourths of the time to over ninety percent of the time.

First grade teachers guided their students to the passage to derive the correct word from context a little over twenty percent of the time, while second grade teachers averaged a return to context less than ten percent of the time. Third grade teachers used context to correct words about as frequently as second grade teachers.

Praise. The last measure for story-reading is the percentage of time teachers praised their students "specifically," using such phrases as, "You're reading carefully and with good expression," or generally saying something like, "good," or "ok." These teachers varied little from first grade through third grade in their percentage of specific to general praise. They gave their students general praise about five percent of the time, so students seldom got specific praise for their reading performance.

Significance Testing

Table 3 shows the t-tests conducted to determine if significant differences exist between grades and question-types, vocabulary, story-reading time, feedback, student mistakes, and teacher praise. There are significant differences at the .05 level for all three question types between first and second grade, and between first and third grade. The differences are not significant between second and third grade. The pattern is somewhat different for the number of vocabulary words presented and the time for story-reading. Significant differences exist at the .05 level for both vocabulary and time between first and third grade, and between second and third grade, but not between first and second grade.

The changes for feedback show significant differences between using context for feedback between grades 1 and 2 and grades 1 and 3. There are also significant differences for telling the students the correct word as a
significant differences also appeared between grades 1 and 2 for sounding out used as feedback, though neither the second nor third grade teachers used sounding out as a type of feedback.

Significant differences at the .05 level also appeared for errors made during story reading between grades 1 and 2, and 2 and 3, though not between grades 1 and 3. The only statistically significant differences in the teachers' praise was for the percentages of specific praise between grades 1 and 3, and 2 and 3. No significant differences were found between grades for general praise.

**Limitations**

Before beginning the Discussion and Implications sections of this paper, I want to discuss two limitations to this study. First, all data presented here were gathered during a single observation in each classroom. Although other work (see Barr and Dreeben, 1983, for example) has found great stability among teachers with repeated observations, none the less, with a single observation, it is always possible that I observed an atypical lesson.

Second, the rather large standard deviations for the number of scriptal questions in grades 1 and 2; vocabulary errors, teacher feedback, and specific praise in all three grades, show substantial variance among these teachers in these grades within their group clusters (e.g., high-performers, low-performers) in this area. This much variability makes comparisons of central tendency for these teachers less meaningful than the comparisons would be if there were less variance.
Discussion

Before discussing the differences in comprehension assessment made by these teachers as we look at first, second, and third grade story-reading, recall what we did not observe. There was not one instance of reading comprehension instruction seen in one of these fifty-eight reading groups. Yet, this school district, dominated by low socio economic status (SES) students, has about ninety percent of its second graders and over eighty percent of its third graders performing at or above grade level in reading comprehension. We must view the findings from this study in light of this backdrop.

The primary question driving this study was what kinds of comprehension questions are teachers in an instructionally effective school district asking. A question of almost equal importance was, do these question-types change with respect to grade level or the ability level of reading groups within each grade level? The simple answers to these questions are yes, teachers differ in the percentage of text-explicit, text-implicit, and scriptal questions they ask from first grade through third grade. Teachers also vary in the percentage of these question-types they give to their ability-grouped students, though the changes from grade to grade are more significant than the changes from one instructional group to another within grades. Generally, teachers ask more factual questions to their lower grade and lower-performing students. Teachers reversed this pattern for inferential questions. First grade teachers asked less than half the number of text implicit questions than third grade teachers asked. So, the teachers shifted overall from higher percentages of factual questions in first grade to higher percentages of inferential questions in third grade. The overall pattern for scriptal questions shadowed that of inferential questions. By third grade, most teachers asked from six to ten
times the number of scriptal (prior knowledge) questions that first grade teachers asked.

We also have some answers to the secondary questions raised in this study. First, teachers increased their vocabulary questions from first through third grade. In fact, the third grade teachers increased their work on vocabulary so that they asked five times the number of vocabulary questions of their students that the first grade teachers asked. This significant increase in emphasis on vocabulary may have resulted from story vocabularies that contain more words foreign to the children’s speaking vocabularies by third grade. In first grade, most of the basal stories have reading vocabularies with few words that are unfamiliar to the children.

The number of reading errors the groups made held fairly constant from first grade through third grade. This consistent error rate shows fairly stable decoding patterns for oral reading. Overall, these groups made few decoding errors with the exception of the third grade low-performing groups.

Despite the relatively stable error rates for these groups, the teachers’ feedback when students made errors did change significantly from first grade to third grade. The biggest changes in feedback were that after first grade, teachers used no sounding out corrections. They generally increased the percentage of corrections they made by simply telling students the correct word. Whereas teachers told students who made errors the correct word about half the time in first grade, they used telling as a correction procedure about ninety percent of the time in third grade. Teachers instructed students to derive the correct word from context a little over twenty percent of the time in first grade, and less
than five percent of the time in second and third grade.

Time for story-reading increased from about seven and a half minutes in first grade to almost ten and a half minutes in third grade. This increase in story-reading time demonstrates the substantial increase in story length by third grade. The teachers were very stable in their use of praise. The praised "generally" close to three-fourths of the time in all three grades.

Implications

Returning now to the reasons for conducting this study, I asked, "What are teachers in an instructionally effective school district doing when they teach story-reading to their small groups?" And, how can we classify these teaching procedures? If we use Durkin's 1978-1979 definitions, does reading comprehension instruction or assessment dominate story-reading time? I'd argue that while all of the questions these teachers used fit Durkin's definition of assessment--"teacher does/says something in order to learn whether what was read was comprehended" (p. 490)--the impressive reading comprehension achievement performance in this district suggests that students may be benefitting from the teachers' question-asking (assessment).

While these questions allow teachers to assess students' performance, perhaps these questions serve the students in very different ways. Is it possible that the teachers' questions model for students what is important in the stories? Does the teacher's focus in fact teach students to select certain types of information to remember from stories? In fact, is it not possible that the teachers' questions in the early grades serve as "models" for students to learn to monitor their own reading when no one is around to remind them to retain important story details such as who the main
characters are, where the story takes place, and when; as well as more sophisticated information in the story such as what kind of conflict developed and how the characters or events resolved the conflict? Aren't these teachers' questions similar in purpose to the models developed by Palincsar and Brown (1983) for Reciprocal Teaching to teach students who decode well but comprehend poorly to monitor their own reading? The Reciprocal Teaching model provides explicit instruction in asking questions, summarizing details, predicting what will happen, and clarifying unclear words, passages, or phrases. How different are these Reciprocal Teaching procedures for remedial junior high school students from questions these teachers are asking in first, second, and third grade?

Furthermore, these findings for high student achievement resulting from teacher questions are supported by research on the effects of factual and inferential questions. In 1979, Winne concluded,

Specifically, the conceptual definition of higher cognitive questions, namely that such questions get students to recall and mentally manipulate information, has not yet been sufficiently demonstrated empirically. Few studies in the traditional body of research on teaching, and none of the experiments reviewed here, have documented that higher cognitive questions actually promote the assumed cognitive processes in students. (Winne, 1979, p. 44).

thus reconfirming positive effects for student achievement when teachers used factual questions specifically related to text.

Winne's review focused on basic skills studies, but his findings also hold for research in other subjects as well such as the work on the constitutional rights of youth, reported by Fielding, Kameenui, and Gersten (in press) or introductory student achievement physics (Larkin & Reif, 1976).

In addition to the substantial support for factual questions, support for teachers' inserted questions comes from a number of studies that compared differential student achievement in reading comprehension.
Hansen (1981), and Singer and Donlan (1982) examined the effects of questions presented before reading. Hansen (1981) found that prereading strategies and answering practice for inferences between text and prior knowledge facilitated comprehension performance for second graders. The student who received strategies and answering practice performed better than a control group on standardized tests and experimenter-designed tests. Hansen's (1981) results consistently favored the question-answering group.

Singer and Donlan (1982) studied teacher-posed questions received before passage reading for one treatment group and student generated specific questions. They found differences for students taught to generate their own questions. Singer and Donlan (1982) varied both the timing (before vs. during) as well as the source (teacher vs. students) of questions. Because Singer and Donlan (1982) manipulated two variables, it is impossible to attribute their statistically significant differences in student outcomes simply to either the timing or origin of the questions.

It might be that good questions are the models many students need to begin processing their texts in the early grades, and it could be that these teacher models during story-reading coupled with language instruction that teaches the students how to classify, objects and actions, figure out analogies, solve deductions, and reason through complicated or unusual situations is important to promote high student achievement in reading comprehension. It may be that it is impossible to generate rules or other instruction for reading comprehension during the reading lesson for six and seven year olds still struggling with decoding. It may be that generalizable language instruction should be taught separately and then modeled by the teacher by his/her questions that apply it for students during story-reading. Separating language and reasoning instruction and
practice from reading practice and comprehension modeling may be the missing instructional step for low-performing students, who find themselves overwhelmed by the intricacies of decoding and comprehending what they read. If these students cannot answer questions when read to, I doubt they can answer questions while reading.

This study of teaching behaviors during story-reading suggests an instructional model to explain how students learn to comprehend what they read which in teachers may need to become increasingly aware of the impact of their model for students during story-reading. Thus, Palincsar and Brown's (1987) remedial research coupled with the general findings from the various studies of the effects of questions inserted during reading help to explain the reading comprehension performance of these groups.

Teachers who ask questions about major aspects of stories model for students that this is what they should be "doing" while reading just as teachers who skip over difficult vocabulary or dwell on minute details model very different reading processes.
Reference Note

References


Table 1

Questions, Vocabulary, and Decoding Error Means and Standard Deviations by Group Clusters and Grade

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## Table 2

Story Reading Time, Type of Feedback, and Type of Praise Means and Standard Deviations by Group Clusters and Grade

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<th>% Feedback</th>
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Table 3

T-Test for Significant Differences Between Question-Type, Vocabulary, Time, Feedback, Errors, and Praise in Grades 1, 2, & 3

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*0 instances of sounding out feedback in third grade make it impossible to calculate these statistics.