THE FUNCTIONAL ROLE OF TEACHER ELICITATIONS IN INSTRUCTIONAL SEQUENCE INTERACTIONS DURING THE LOW GROUP READING SKILL LESSONS OF MORE EFFECTIVE AND LESS EFFECTIVE FIFTH GRADE TEACHERS

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ABSTRACT

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This dissertation investigated the functional roles of teachers' questioning practices in low reading group instruction.

Twelve fifth grade teachers were included in the study. Six were designated as "more effective" and six as "less effective," on the basis of their students' awareness of reading strategies and gains in reading achievement. Teacher-student verbal interaction sequences and component discourse elements (i.e., teachers' elicitations and evaluations) were identified and analyzed for frequency and lesson positioning. In all, transcripts and audiotapes from fifty-one skill lessons were examined on the following dimensions: (a) elicitation frequency within identified lesson sections or phases; (b) content focus of instructional sequences; (c) knowledge orientation conveyed in instructional sequences (i.e., declarative, procedural and conditional knowledge); (d) structural form of verbal discourse of instructional sequences (i.e., interaction formats, including length of interactions); and

(e) perceived purpose of the teacher's instructional task (i.e., assessment or assistance).

Quantitative analyses yielded few statistically significant differences between the more effective and less effective groups, but several suggestive trends were present that were buttressed by complementary qualitative transcript analyses. In particular, four conclusions about more and less effective low group skill instruction appear warranted on the basis of the study: (a) the position within phases of sequences that involved elicitations of different types is key to the function of questioning in skill lessons; (b) elicitation sequences that provide students with practice opportunities for skill use are preceded in more effective lessons by an explicit presentation of information; (c) elicitations assist student learning by modeling skills and by directing student attention to important skill features; and (d) more effective assessment questioning goes beyond declarative knowledge to include procedural and conditional skill knowledge as well.

On the basis of these results, the dissertation implies several directions for further questioning research in reading, and suggests strategies for teacher educators and classroom teachers for improving questioning in reading skill instruction.

For Jessica

Who knows that competing with
a dissertation isn't easy!

With Love

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CHAPTER I

INTRODUCTION AND PURPOSE

Teacher questioning is a central feature of the reading instruction provided in elementary classrooms. Findings from observational studies of classrooms have repeatedly confirmed the obvious: teachers spend a great deal of their instructional time asking questions. Teacher questioning is a frequently used pedagogical device for facilitating students' thinking about academic content. Given the large amounts of time teachers and students spend verbally interacting during the daily reading period, it is not surprising that teachers' questioning practices command a great deal of attention from researchers and educators interested in improving the quality of reading instruction.

A persistent belief among educators and educational researchers is that good instruction means good questioning. Classroom questioning practices continue to enjoy a high level of investigation from a variety of methodological perspectives. Despite its popularity as a research topic, however, teacher questioning's role in promoting greater student learning during reading instruction remains unclear.

The belief that the role of teacher questioning practices in reading lessons should be instructionally strategic--that is, more than mere assessment of content outcomes,

provided the impetus for this study. Assessment is certainly an important component of reading instruction, and it is one important area served by teacher questioning. The assumptions that more questions are better questions (Tom, 1984) and that all students implicitly understand how to be strategic when reading just by answering example or story based questions aimed at different cognitive skill levels, encourages the limited instructional use of teacher elicitations for knowledge assessment, however. Teachers' assessment questioning functions to evaluate how students are responding to instructional intent, to gage students' ability to correctly use reading skills (e.g., decoding skills, comprehension strategies), to ascertain if students are paying attention to important information, and to establish a pace for instructional interactions. To be more effective, however, instructional assessment should do more than monitor students' ability to use reading skills to produce correct informational content. It should also provide information about how aware students themselves are of which cognitive skills they are using, why they are using them and how they are using them (Duffy, Roehler, Meloth & Vavrus, 1986b).

Additionally, recent research on student metacognition (Baker & Brown, 1984; Paris, Lipson & Wixson, 1983) suggests an assistance role for teacher questioning. Effective teacher questioning behaviors should not only assess where students are in the learning process but should also guide

them in developing conscious understanding, or metacognitive awareness, of the cognitive processes they used to get there. Thus, effective teacher questioning behaviors should ideally function to both assist and assess student learning.

In the present study, I investigated the validity of this view by studying teacher elicitations embedded in teacher-student interaction sequences in the instructional context of reading skill lessons. Teacher elicitations are rarely isolated lesson events whose role in instruction can be evaluated simply by tallying their overall frequency or categorizing the kind of information individual questions elicit according to taxonomies of cognitive skill levels (i.e.. literal, inferential, evaluative, etc.). Further, reading instruction in American elementary schools occurs in a variety of lessons, not just story comprehension lessons. To understand the role of teacher questioning in reading instruction requires examining those behaviors in a variety of lesson contexts. Prominent among those contexts is the skill lesson.

For this study, reading skill instruction was of interest and was defined as that which the teacher says and does to actively promote student conscious awareness of process, as well as product, learning outcomes (Roehler, Duffy & Meloth, 1984; Duffy & Roehler, et al., 1986b). Recent studies of the effects of teacher explanations on low reading group students' reading achievement and awareness of instructional outcomes (Duffy, Roehler, Meloth, Polin,

Rackliffe, Tracy & Vavrus, in press; Duffy, Roehler, Meloth, Vavrus, Book, Putnam & Wesselman, 1986c) indicate that students learn more in skill lessons when the teacher provides explicit explanations of skill tasks that focus on using the prescribed skills as strategies, as opposed to lessons in which students are simply being engaged, interrogated or given practice opportunities (Duffy & Roehler, 1982b). Studies of teachers' explanations have not, however, carefully examined the role of questioning behaviors in skill lessons where explanations, differing in degrees of explicitness, are present. Thus, lessons taught by teachers identified as providing more and less effective skill instruction were descriptively analyzed to better understand the relationships between teacher questioning, the instructional interaction context created during skill instruction, and instructional effectiveness.

THE PROBLEM

Statement of the problem

The purpose of this study was to provide further understanding of how teachers use questioning during reading instruction. The goal was to further clarify the functional role of teacher questioning practices in reading skill instruction by undertaking *post hoc* descriptive analyses of the interaction sequence elicitation patterns found in skill lessons. The study examined teacher questioning patterns by analyzing teacher-student verbal interaction sequences in

the context of lessons intended to teach reading skills. The instructional sequence patterns in the lessons of six more effective and six less effective teachers of fifth grade low reading groups were compared. The grouping criteria for identifying teacher effectiveness were student achievement growth and instructional awareness.

The study identified and characterized similarities and differences between the two teacher groups for several functional aspects of elicitation-response-feedback sequences. Aspects of sequences and their discourse elements (i.e., teachers' elicitations and evaluations), examined for frequency combined with lesson positioning, included the following: (a) elicitation frequency in interactional sequences within identified lesson sections or phases; (b) the informational or topic content focus of instructional sequences, particularly those containing elicitations; (c) the knowledge orientation or kind of cognitive mediation conveyed through instructional sequences--i.e., declarative, procedural and conditional knowledge (Paris, et al., 1983; Winne, 1985); (d) structural elements characterizing the verbal discourse of instructional sequences (i.e., interaction forms and length of interactions); and (e) the perceived purpose of the teacher's instructional task in interactive sequences (i.e., assessment or assistance) communicated by elicitations which initiated and probed student responses.

Background to the problem

The educational research literature of the past fifty years documents numerous studies of instructional questioning practices (See reviews by Andre, 1984; Bean, 1985; Bloome & Green, 1984; Brophy, 1979; Brophy & Good, 1986; Dillon, 1982b, 1982c; Gall, 1970, 1972; Good, 1983b; Dunkin & Biddle, 1974; Rosenshine, 1971, 1983; Rosenshine and Stevens, 1984; Wilen, 1984). In that time questioning practices have been viewed from diverse disciplinary perspectives, including instructional psychology, educational sociology, linguistics and cognitive psychology. Questioning research reflects at least three major trends: the identification of effective generic teaching practices; the description of important discourse elements in classroom interactions; and the development of cognitive training programs.

Past studies in the process-product tradition (Dunkin & Biddle, 1974) were preoccupied with the identification of cognitive levels of question types and the quantification of questioning practices associated with them. These studies had roughly two foci: determining the levels of student cognitive processing elicited by "lower" and "higher" order questions (Andre, 1979; Redfield & Rousseau, 1980; Winne, 1979) and establishing "teacher effects" on learning outcomes (Brophy and Good, 1986) by experimentally or correlationally identifying relationships between questioning practices and student achievement gains.

Detailed taxonomies were developed or existing taxonomies modified to allow classification of observed teachers' elicitations according to cognitive skill levels of student performance. Conducting research along these lines often required isolating teacher questions as singular discourse events, with less concern for their interrelatedness to other conversation elements and dependency on subject matter content, instructional task, or social context. Many of these studies, when examining elementary instruction, used reading as the context in which to experimentally manipulate, or observe and tally as they occurred, teachers' questions (Rosenshine and Stevens, 1984). The intent here was to support generalizable, prescriptive claims about what teachers ought to do to make their questioning practices instructionally more effective (Tom, 1984). A major finding from process-product research on questioning practices, however, has been the realization that questioning practices are not easily understood out of context (Brophy & Good, 1986). In other words, it's one thing to tell teachers to ask "better questions" yet quite another to offer global prescriptions as to what those questions should be.

To counteract the perceived superficiality of process-product studies, sociolinguists and ethnographers interested in classroom processes have turned their attention to in-depth descriptive analyses of classroom interactions and begun characterizing questions from the standpoint of their role as contextualized social, as well as academic,

discourse elements (Bloome & Argumedo, 1985; Bloome & Green, 1984; Green, 1983a; Green & Wallat, 1981; Gumperz & Herasimchuk, 1973; Heap, 1982, 1985; Mehan, 1979a, 1982). Qualitative studies have, as well, addressed questioning practices across grade levels and subject matter areas but have centered on characterizing teacher-student interactions during the reading period. Qualitative researchers have reserved prescriptive judgments about how best to conduct instructional interactions. Instead, in-depth understanding of the meaning of the classroom discourse events associated with learning to read, as they are practiced in naturalistic settings, has been of interest.

Most recently, cognitive psychologists have ventured into the classroom to explore how students develop awareness of the mental processes used to perform intellectual tasks and how that awareness can be affected by cognitive training (Baker & Brown, 1984; Brainin, 1985). From this perspective, teacher questioning practices are important to understand in light of their mediating effects on student learning (Doyle, 1979, 1982; Winne, 1985; Winne & Marx, 1982). Again, reading instruction has been a key instructional setting for pursuing the efficacy of cognitive skills training programs and methods that incorporate process-focused teacher questioning strategies (Johnston, 1985; Tierney & Cunningham, 1984).

While much has been learned from these broadened research perspectives, considerable disagreement about the

purposes of instructional questioning persists. This is particularly true for questioning practices during elementary reading instruction. In this area there are four areas of disagreement in need of clarification.

The first major problem is the lack of consensus as to the kind of lessons that provides comprehension instruction (e.g., cf., Carnine & Gersten, 1983; Duffy & McIntyre, 1982; Roehler, Duffy & Meloth, 1984; Durkin, 1978-79; Hodges, 1980; MacGinitie, 1983; Pearson, 1985; Tharp & Gallimore, 1983). Needless to say, how one conceptualizes instruction is bound to influence how one perceives the role of teacher questioning behaviors during reading lessons. This problem has been confused in the research literature, however, by the tendency to equate reading instruction with the dominant, basal textbook, story-based comprehension lesson.

As will be elaborated in Chapter II's review of the literature, most of the instructional studies in reading have addressed teachers' questioning practices in the context of story-based comprehension lessons. While these lessons may predominate in most elementary reading programs, they are not the only task settings which should be studied to understand teacher-student interactions and the role of teacher elicitations in those interactions as they might affect students' learning to read. Studies of teacher questioning practices in kinds of reading lessons other than those involving the reading of stories followed by questions about story content are needed. Prominent among these other

kinds of instructional episodes are skill lessons. In a study of teacher questioning patterns during basal reader instruction Mangano (1983) observed, "Questioning of students would probably take on different characteristics during a skills lesson than it would following the reading of a story or content area text" (p. 2).

Second, studies of cognitive levels of questions and of the relationships between those types of questions and student achievement suggest that the effectiveness of different questioning practices for maximizing achievement depends upon students' reading aptitude and grade level (Guszak, 1967; Hare & Pulliam, 1980; Brophy & Good, 1986). Research has consistently demonstrated that high and low ability readers appear to respond differentially to instructional task conditions (Allington, 1983; Anderson, 1981a, 1981b; Doyle, 1983; Hansen & Pearson, 1983; Pearson, 1984; Pearson & Gallagher, 1983). More importantly, teachers appear to structure questioning patterns in academic tasks in reading differently based on their perceptions of reader aptitude (Haskins, Walden & Ramey, 1983; Shake & Allington, 1985). Those most affected by differential treatment are low aptitude readers (Anderson, 1981a, 1981b; Garner & Taylor, 1982; Good, 1981; Paris & Myers, 1982). If this is the case, then there is a need to better understand the dynamics of the verbal interactions that characterize reading instruction for readers of differing aptitudes, particularly those at the lower end of the reading performance continuum.

Third, researchers need to agree on the more basic issue of what constitutes a reasonable definition of classroom questioning. One explanation of why questioning research has fallen short in leading to an understanding of the role questioning plays in instruction has been too narrow a conception of what constitutes a question (Heap, 1982; Mehan, 1979a). Studies which identify teacher questions solely on the basis of their grammatical correctness as interrogatives, instead of on the basis of how different forms of utterances function as elicitations of student responses, permit many kinds of teacher questioning behaviors to slip between the analytical cracks. One promising direction is to dispense with these narrow characterizations and define "the classroom question" in broader terms.

Finally, there is the issue of whether questioning can be considered instructional assistance, as well as instructional assessment. Process-product researchers interested in teacher effectiveness have studied the relationship between the frequency of teachers' use of different cognitive levels of questions and student achievement, concluding that the more effective teacher is one who asks more questions with an academic focus (Rosenshine, 1976, 1983). For example, if teachers are interested in teaching children basic skills, they tend to elicit numerous responses focused on factual recall and recognition (Brophy, 1979; Dunkin & Biddle, 1974; Gall, 1972; Rosenshine, 1976, 1983; Rosenshine & Stevens, 1984). Likewise, if teachers are interested in

teaching children to comprehend informational content, a "cognitively rich" diet of questions with an academic focus is desirable (Andre, 1979; Bloom, et al., 1956; Sanders, 1966; Tharp and Gallimore, 1983). An underlying assumption in both cases is that questioning, in and of itself, provides instruction. Students' acquisition of and ability to use cognitive skills is assumed on the basis of students' correct responses to teacher questions (Tharp, 1982). Thus, the message from process-product questioning research to teachers is this: to improve instruction, increase the quantity and upgrade the cognitive level of questions in order to determine what and how much informational content students have mastered--and do this often!

Unfortunately, while cognitive variety and academic focus may be important attributes of effective teacher questioning, these attributes have been difficult to locate in observational studies of classrooms. Wilen (1984) reported that teacher questions were typically used merely for literal level comprehension of content focused on memorization. Further, most questions of this type, as reported in studies of classroom reading instruction, were posed primarily to assess or monitor student learning (Duffy and McIntyre, 1982; Durkin, 1978-79, 1984).

These findings suggest a very limited instructional role for teacher questioning--one merely of assessment of content coverage. In reading instruction, this means the focus of teacher questioning behaviors is on producing

answer accuracy through interrogation and recitation (Duffy & McIntyre, 1982; Durkin, 1978-79, 1984); in other words, testing what students know. Getting a sense of where students are in the learning process is narrowly conceived in terms of product outcomes--answer-getting to workbook exercises and questions about the topical content of basal textbook stories (Durkin, 1984). Ultimately, students learn that it is "what you know," not "how you know," that is important. Duffy, Roehler, Vavrus, Book, Meloth, Putnam and Wesselman (1984) observed:

> When assigned academic reading tasks, students make interpretations about what they are supposed to learn by reference to the task being assigned. If the task is one of accurate answer-getting, they conclude that reading is rote answer-getting; if the task is one of strategically and consciously applying skills to solve problems of meaning-getting in text, they conclude that reading is strategic. (p. 3)

In summary, researchers are just beginning to disentangle the complexities of how patterns of verbal interaction act as mediating factors in providing more or less effective reading instruction. While there is general agreement that certain general patterns of teacher behaviors do make a difference in instructional quality (Brophy & Good, 1986), much work remains to be done in identifying specific contexts in which teachers implement particular patterns more effectively. One area needing further clarification in classroom reading instruction is <u>how</u> teachers pattern elicitations during instruction intended to mediate student acquisition of reading skill knowledge and

the cognitive strategies needed to more efficiently comprehend text.

Significance of the study

This study contributes depth to the study of teacher questioning because it provides information about how elicitations function to mediate student learning outcomes in instructional interactions when reading skills are being learned. Researchers interested in improving students' cognitive skill functioning have concentrated on describing teacher-student interactions during text-based comprehension lessons. As yet, development of the same kind of in-depth data base for other kinds of reading lesson interactions, particularly skill lessons, is in its infancy.

Additionally, research on questioning generally, and research on teacher questioning during reading instruction specifically, provides only limited support for the prescriptions that have been offered in educational methods texts and courses. Researchers remain divided regarding how to instruct teachers and perspective teachers about "the best way" to ask questions or the "best" kinds of questions to ask. The lack of attention to contextualization remains a problem. While findings generally support teachers asking lots of academically-focused questions in order to improve student achievement, these findings are limited in their ability to help researchers or, more importantly, classroom practitioners understand how teachers' questioning behaviors function during specific kinds of instructional

interactions to promote the development and use of students' reading skills and strategies.

The results of this study are important for both reading educators and researchers for several reasons.

First, elementary teachers are involved in skill teaching as part of their instructional programs in reading. It is important for teachers to understand how skills can be more effectively taught to enable students to better integrate knowledge and use of skills in real reading situations. Additionally, teachers can benefit with better knowledge of how their questioning practices can be integrated into a pedagogy of instruction that asserts the importance of providing active assistance to students learning to use reading skills. One way to accomplish this would be to employ descriptive methods which qualitatively, as well as quantitatively, examine the teacher-student verbal interactions that occur during various parts of skill lessons and begin to characterize differences in the elicitation patterns of more effective and less effective teachers.

Second, there is growing confirmation that the content focus of elicitations communicates to students what the teacher really values as important to remember about the reading lesson (Wixson, 1983b). In skill lessons, this means that the teacher's questioning practices may or may not provide students with important accountability information about the strategic reading behaviors they must be able to use to demonstrate skill mastery. It would be

instructive to compare how more effective and less effective teachers might vary in their patterns of eliciting student responses to develop such accountability for skill knowledge and skill use. Characterizing differences in content foci might be important in understanding why some students view skills as isolated bits of information and others view skills as strategies to selectively apply toward achieving greater reading comprehension. This would be of particular interest for low group instruction since these readers most consistently receive the heaviest doses of skill instruction (Shake & Allington, 1985).

Third, interactive teacher elicitation-student response-teacher feedback sequences can serve as useful instructional tools for guiding students toward understanding the fit of particular reading skills into the whole of the reading act. In addition to explicit explanations, explicit questioning patterns may be another means teachers might deliberately employ at particular lesson points to model how to perform skills and how to use skills strategically when solving problems encountered in reading.

Fourth, the ultimate goal of reading instruction is the development of self-sufficient readers who comprehend what they read or know what to do when they don't (Johnston, 1985; Roehler & Duffy, 1984; Winne, 1985). Given this goal, I believe teachers have an obligation to provide appropriate directed assistance that helps readers of all ability levels develop self-sufficiency. Collins and Smith (1980)

summarize the importance of this aspect of the problem as follows:

> We do not argue that reading curricula should not stress interpretation. We argue only that reading curricula should also try to teach how to construct interpretations . . . If we do not teach these skills, then the better students will develop them on their own, and the worse readers will find reading very frustrating. (p. 28)

For low ability readers, especially, this entails explicit instruction in how to use reading skills strategically (Duffy & Roehler, et al., 1986c; Roehler & Duffy, 1984). While recent research has begun documenting how teachers explicitly explain the processes of reading during skill instruction, there is a need to establish how explicitness might be importantly related to teachers' questioning practices in teaching the strategic use of skills.

Fifth, this study is grounded in the belief that there is more to effectively mediating students' acquisition of reading skills than an explicit presentation. Explicit questioning geared toward the intended outcome of developing deliberate, yet flexible, use of reading strategies may complement explicit explanation (Roehler, Duffy & Meloth, 1984; Vavrus, 1983). I was interested in investigating the possibility that the teacher's elicitations during instructional events are a pivotal variable that assists students in developing better awareness of how to use reading skills strategically. By orchestrating an on-going progression of other- to self-regulated interaction sequences in skill lessons, teachers may provide guidance

for students' demonstrations of their understanding of the strategic role of skills in comprehending text. In this sense, teacher elicitations might be thought of as opening the "window to the mind." As yet, however, research on questioning, with an eye on its relationship to explanation, has not been systematically undertaken.

In summary, this dissertation identifies factors that appear to be important in characterizing teacher questioning practices and explores their use in actual lessons. By investigating the use of elicitations by teachers selected on the basis of their instructional effectiveness in teaching reading skills, this study contributes to expanding understanding of questionings' contribution to instructional effectiveness in a particular, and important, area of the elementary reading curriculum. An investigation of this kind should inform suggestions for improvement of instructional practices, particularly when teaching reading skills. Methodologically, this study elaborates a qualitatively-based model for examining lesson interactions through transcript analysis, consistent with Hugh Mehan's (1979a) model for studying classroom interactions.

The remainder of this chapter will establish the parameters used to conduct the research. Terms will be defined, the research questions stated, the design of the study overviewed, and assumptions and limitations clarified.

DEFINITIONS

For the purposes of the dissertation, there are several terms used which warrant definitional clarification. Many of the terms used represent subdivision descriptors of categories used to code types of lesson discourse elements. The following definitions of general and specific terms were used.

General Terms

Skill lesson. This type of reading lesson is designed to teach a particular reading skill for later use when reading. Examples of topics covered by skill lessons can be found in the "scope and sequence" charts provided in the introductory information in teacher editions of most basal textbook reading programs. Skill lessons contrast with comprehension lessons as they are typically conducted because the latter are dependent upon the content of a previously read basal story. In skill lessons, the teacher uses word- or text-level examples (which may or may not be found in an accompanying story) to focus instruction on the use of particular cognitive process factors associated with reading rather than on the interpretation of story content. Examples of typically taught reading skills are the following: word identification skills, such as use of prefixes and suffixes or context clues; comprehension skills, such as determining main ideas; and study skills, such as locating important information.

Teacher effectiveness. For this study, the term refers to the quality of reading instruction provided for promoting student growth in reading. Effectiveness is defined in terms of the teacher's success in two areas of student outcomes: (1) student awareness of the teacher's instructional purpose; and (3) student reading achievement growth as measured by the use of standardized reading achievement tests.

Teacher explanation: This terms refers to the explicit, expository statements made by teachers during skill lessons which present information about what is to be learned, how to do it and when it is to be used in reading.

Mental processing strategies. This term refers to the repertoire of reading skills and strategies which represent the cognitive processes used by proficient readers to activate, monitor, and regulate meaning-getting when reading text. They are the implicit algorithms and principles which govern successful comprehension (Roehler & Duffy, 1984) and characterize reading behavior as planful (Paris, et al., 1983). When reading is proceeding smoothly, these strategies are applied automatically (after LaBerge & Samuels, 1974; Samuels, 1983). However, when meaning breaks down, these strategies are selectively retrieved and consciously applied until the problem is resolved (Roehler & Duffy, 1984). Gibson (1974) summarized the metacognitive character of strategic reading as

> . . . ability to be aware of one's own cognitive processes, from the segmentation of the phonetic stream all the way up to the understanding of strategies of learning and problem-solving. There seems to be a consciousness raising that goes along with many aspect of cognitive development and it turns out, I think, to be associated with attaining mature reading skill. (p. 681)

Terms Used to Characterize Lesson Discourse Elements

Lesson phases. The term "phase" was used to identify the perceived structural subdivisions of the reading skill lesson according to the kind of instructional task pursued by the teacher at various time points in the lesson; for example, introducing the lesson, presenting information about the skill or activities to be performed by students during the lesson, practicing use of reading skills, reviewing information presented thus far in the lesson, and closing the lesson. Except for the introduction and closure phases, lesson phases may be differentially sequenced within the overall lesson structure. The following lesson phases were defined for this study.

(1) Introduction: The teacher begins the lesson by introducing skill lesson's topic and/or task. Student background about the topic or task may be probed for or described by the teacher.

(2) Presentation:

(a) Monologue: The teacher provides information in expository statements with minimal verbal interactions with students. Information presented might include (1) the nature of

what will be learned about the skill; (2) why it is useful to learn and where it can be used; (3) clarification of practice task directions; and/or (4) how to perform the skill when reading.

(b) Interactive Monologue: The teacher explains the nature of the skill or task by using a combination of expository statements and elicitations to create an interaction with students. Rather than simply telling, the teacher confirms the correctness of students' information about the skill. The accuracy of their information is certified (if correct), corrected (if wrong), and/or clarified. Interactive presentation sequences differ from guided practice in that it is clear the teacher is presenting new information in the lesson during this phase. Also, these sequences lack the structural formality found in interactive practice sequences in terms of sequence initiations via teacher elicitations.

(3) Guided Practice: The teacher conducts an interaction with students which uses examples that require use of the skill. The intent is to solidify student knowledge of the skill or of how to perform the task to enable them to do independent

work with it. This phase is characterized by elicitations of student responses followed by certifying feedback and elaborations by the teacher when evaluating those responses. The interaction sequences in this phase are often extended beyond the simple 3-part sequence to add depth to discussion of the skill or example. Extensions occur following correct, as well as incorrect student responses. A variety of sequences may be included in this phase focused on assessing student knowledge or providing assistance to solidify knowledge of the skill topic or process. Extended interaction sequences prolong consideration of the sequence topic and teacher elaborations are common as evaluations.

(4) Recitation Practice: The teacher verbally "tests" or assesses students' knowledge through a series of examples typically taken from practice sheets or written on the board to allow students opportunities to use the skill. This phase is characterized by shorter interaction sequences with less teacher elaboration to student responses. There are typically fewer extended sequences since the intent is assessment of student mastery of skill use prior to independent practice. If they occur in this phase, extended interactions most often seek to repair incorrect

student responses and obtain acceptable answers.

(5) Independent Practice: The teacher embeds time within/between prior phases or following recitation practice for students to complete practice examples using the skill on their own. When this phase occurs within the lesson, student answers are often used as the basis for group guided or recitation practice.

(6) Lesson Closure: The teacher makes statements to conclude the lesson before changing to another topic or activity with the same or different student group. This phase may precede independent practice or seatwork not considered part of the actual group lesson.

(7) Review: The teacher initiates statements or elicits responses, either as a transition to another phase (i.e., guided or recitation practice typically in these lessons, or prior to closure) or as a brief interruption of a practice phase. Reviews are explicitly intended to refocus attention on the task and/or skill topic of the lesson, not the informational content of examples being used for practice. This phase seems intended to assess student understanding of aspects related to the lesson topic.

Many of the terms used refer to characterizations given various discourse elements identified to describe teachers'

questioning practices. The terms used to characterize sequences, elicitations and feedback elements are defined as follows.

Instructional sequence. In skill lessons, instructional sequences were identified as topically-related sets of information conveyed through the teacher's initiation of an expository monologue sequence and/or through teacher-student interaction sequences. Topical information characterizing the content foci of instructional sequences in the lessons examined for this study grouped into five broad categories: (1) student background experiences; (2) information about the skill and its characteristics; (3) example content; (4) task/assignment directions; and (5) miscellaneous topics, especially references to the informational content of previously read basal stories.

While there may be some student verbal participation in teacher monologue sequences, the teacher's talk predominates and student participation is less structured than in interaction sequences. Typically, interaction sequences are initiated by the teacher's statements or elicitations, although they may be initiated by student questions.

Interaction Sequence. In instructional discourse events, instructional sequences which contain elicitations will be called "interaction sequences". This term refers to the basic three part, teacher initiated set of teacher-student verbal initiations and responses: teacher elicitation-student response-teacher evaluation/ elaboration (Mehan,

1979a). In this study these were called simple sequences. The teacher elicits a student response which is then evaluated by teacher feedback for its correctness, incorrectness or some other quality of worth. When teacher-student verbal interaction sequences contain several teacher elicitations (an initiation and probes), student responses and teacher elaborative comments prior to evaluative certification, they are called extended interaction sequences. Evaluations may simply certify correctness or note incorrectness; or they may include elaborations of varying lengths during which the teacher emphasizes a student response by repeating it verbatim or provides additional information about the topic of the initial elicitation; or they may probe for additional information. For extended sequences, an additional feature examined was whether the teacher sustained the interaction with the same or different student participants.

In summary, the following list shows the categories of instructional sequence structural form which were included: (1) Teacher Monologue; (2) Interactive Teacher Monologue; (3) Simple Three-part Interaction Sequence; (4) Extended Interaction based on Accepted Student Response; and (5) Extended Interaction based on Incorrect/Unacceptable Student Response.

Elicitations. This term characterizes the questioning behaviors used by teachers to obtain student responses during instructional interactions. After Mehan (1979a), this term refers to functional utterances which require some form

of response (either verbal or nonverbal, typically) in interactional events between two or more participants. Elicitations include explicit requests for responses, syntactically structured as interrogatives or commands. They also include implied requests for information which may be signalled by a verbal intonational cue applied to statements or sentence fragments, such as addressing a student by name. The respondent infers the nature of the response requested based on the immediate task content of the interaction.

The term "question" will be cautiously used because of its historically limiting semantic association with a particular grammatical form--the interrogative. While use of the term is helpful for analyzing sentences, the term "question" constrains descriptions of what functionally transpires between participants in naturally occurring discourse, such as that found in instructional events in classrooms (Mehan, 1979a). Thus, elicitations include, but are not limited to, utterances containing wh-words, having subject and verb reversed and being spoken with rising intonation at the end of a sentence.

Elicitation types. While numerous types of elicitations were identified in a pilot study (Vavrus, 1983) preceding this study and described below, the functional categories that occurred most frequently in skill lessons, and subsequently became the focus in the present study, conformed to Mehan's definitions (1979a) for three kinds of teacher elicitations that are intended to obtain specific

kinds of information from students. These are the following:

(1) product elicitation. The initiator asks for lower cognitive level response such as a name, a place or some other piece of literal information related to the skill topic or story content being used to teach the strategies associated with the skill topic. The elicitation calls for an informational response that reflects "right" or "wrong" performance of using a complete skill procedure or strategy without specifying how an answer was obtained. Product elicitations focus on students' declarative knowledge of the skill outcome.

(2) process elicitation. The initiator asks for an interpretation of previously presented product information from the respondent that is focused on how to perform the skill. The elicitation requests a description of the mental procedures or steps used to obtain a product answer. The initiator asks for a formulation of the respondent's reasoning for arriving at a product response by specifying the cognition process or strategy by which the preceding answer was obtained. In a sense, this type of elicitation is a request for a demonstration of "how you know you know." It gives the respondent the opportunity to show conscious awareness of how the skill "works", the

salient features of the skill task which must be attended to when a problem is encountered in reading text, and the mental steps completed to perform the skill.

One particular kind of process elicitation that occurred often enough in the lessons used for pilot study analysis to warrant a separate categorical listing were called usefulness elicitations. These request that the respondent demonstrate understanding of the function and utility of the skill being learned. The concept of usefulness is important to metacognition because it represents the acquisition of conditional knowledge (Paris, et al., 1983). During reading skill lessons, students should be aware of the situations during reading when particular skills are needed and used to obtain meaning from the author's message.

(3) Academic management or task elicitations. These are concerned with the teacher's academic management of the lesson task as it progresses or obtaining responses that require attention to following the directions given for completing the tasks of the lesson. They do not require that the student demonstrate mastery of lesson content. Elicitations of this type are often phrased as directives that demand a particular verbal or

nonverbal behavior of some kind.

Academic-management questioning is also concerned with the logistics required for successfully negotiating the instructional task at hand. It is management-oriented and focuses on classroom routines which may or may not directly reflect the instructional topic. Elicitations with this function often inquire about the directions for performing either oral or written tasks during the instructional episode, and are most often associated with preparing students for independent practice or application activities.

Evaluation/Elaboration. In interaction sequences the terms evaluation and elaboration were used to define the teacher's response to a student's response to an elicitation. In the data examined for this study several kinds of evaluation statements and elaborations were identified and defined as follows.

(1) Response Certification: The teacher gives positive or negative feedback to a student response in the form of a one/two word remark certifying the correctness of the response, such as "Good, Okay, No." Response certification can also include the teacher's verbatim repetition of the student's response as a way of certifying correctness or incorrectness.

(2) Elaboration: The teacher provides an extensive comment following the student response that expands the answer or provides additional clarifying or interpretive information about the nature of the response. It includes both positive and negative commentaries which serve as response certification or occur in conjunction with simple feedback; and includes negative certification coupled with statement of the correct answer.

(3) Response Probe: The teacher responds to a student's response with an elicitation as a probe for additional information, thus withholding certification until additional student responses are obtained. Elicitations as feedback occur only in extended sequences of interaction with students and include the following: probes as negative feedback following an incorrect response; probes for more information; probes for a repeat of the response; elicitations that ask students to certify the correctness of another student's response.

Interaction sequence instructional purpose. Two terms, assessment and assistance, have been used to characterize the instructional purposes or functions associated with questioning behaviors/elicitations. In this study, purpose will be considered from the standpoint of how questioning behaviors establish the instructional function(s) which

characterize interaction function(s) which characterize interaction sequences. While not an exhaustive list, the terms assessment and assistance will be used here owing to the extensive coverage they receive in discussions of what constitutes reading instruction (cf., Duffy & McIntyre, 1982; Durkin, 1978-79; Heap, 1982; Hodges, 1980; Roehler & Duffy, 1981; Tharp & Gallimore, 1983). Additionally, it should be remembered that because the interaction sequence is the central event being studied, an elicitation may simultaneously serve more than one purpose.

Assessment questioning refers to interaction sequences in which the elicitations are posed in order to find out "the point of achieved individual competence" (Tharp & Gallimore, 1983)--that is, what the respondent can remember and recall about what is being taught, or whether the skill in question can be used correctly. Interaction sequences with this purpose are directed at determining whether the respondent can produce the correct answer (Roehler, et al., 1984). Thus, the teacher seeks answers which can subsequently be judged as either "right" or "wrong" (Durkin, 1978-79).

The following kinds of assessment questioning were identified in this study:

(1) Assessment of example content obtained by using skill;

(2) Assessment of strategic understanding of skill use;

(3) A combination of (1) and (2);

(4) Assessment of experiential background knowledge of topical content information in examples

(5) Assessment of experiential background knowledge of skill or strategy; and

(6) Assessment of knowledge of procedures/directions for lesson task completion.

Assistance questioning refers to interaction sequences in which elicitations are used by the teacher to provide active guidance in learning how to perform some aspect of the lesson task. Questioning with this purpose is often initiated following a student response which cue or prompt answer production when it has become clear during an interaction that the respondent is having difficulty doing so without mediation from the teacher. According to Tharp & Gallimore (1983), assistance questioning is "responsive and built upon pupil contributions as they are made." Elicitations with this function in interaction sequences are intended to help students develop an understanding of how to think through product, process or metaprocess answers. They explicitly offer guidance to the respondent in how to clarify and elaborate the use of skill procedures or strategies.

The following kinds of assistance questioning were identified in this study:

(1) Questioning provides assistance for correct answer-getting;

(2) Questioning in a perceived sequence provides assistance in student acquisition of skill strategy for performance;

(3) Assistance in developing background knowledge for example topic;

(4) Assistance in developing background knowledge for skill or strategy; and

(5) Assistance in acquiring knowledge of lesson task procedures/directions.

Cognitive Knowledge Type. Instructional sequences were also examined to identify the kinds of knowledge solicited through teacher questioning. After Paris, Lipson and Wixson (1983), the following define the kinds of knowledge elicited by teachers in the study.

(1) Declarative Knowledge: Sequence discourse is focused on developing student understanding of what the skill task is, its characteristics, and how it is structured--either explicitly or implicitly by using skill with examples.

(2) Procedural Knowledge: Sequence discourse is focused on developing student understanding of how to successfully use a skill or strategy.

(3) Conditional Knowledge: Sequence discourse is focused on developing student awareness of when and why a particular skill or strategy would be used to better understand conditions for the skill's usefulness.

(4) Task Procedure Knowledge: Sequence discourse is focused on developing student clarity of expectations about how to do the academic tasks assigned which are associated with the lesson (e.g., organize instructional materials; worksheets).

RESEARCH QUESTIONS

Based on the findings of the pilot study (Vavrus, 1983), described below in conjunction with the research design overview, the present research further investigated the functional roles of teacher elicitations as they occur in interaction sequences in the reading skill lessons of more effective and less effective teachers of low reading groups.

At its broadest level, the study asked, "What is the functional role of teacher questioning during reading skill instruction?" Answering this research question involved identifying the instructional sequences that contain teacher elicitations and other elements that constitute teacher questioning behaviors and then, once identified, describing characteristics that might differentiate more and less effective teachers' lessons. The latter was accomplished by answering the component questions listed below.

The first and second research questions addressed questioning behaviors in terms of the skill lesson as a whole.

1. What are overall similarities and differences in the characteristics of instructional sequences that contain elicitations for more and less effective teachers of low reading groups?

2. When comparing the instructional interaction sequences of more effective and less effective teachers in reading skill lessons,

   (a) are there differences in the kinds of elicitations (i.e., product, process, usefulness and procedural/academic management) more and less effective teachers pose when teaching reading skill lessons?

   (b) are there differences in the frequency of elicitations of various kinds within the lesson?

   (c) are there differences in the structural forms of interaction sequences?

   (d) are there differences in the informational or topical content pursued through questioning within instructional sequences?

   (e) are the differences in the kinds of evaluation and/or elaboration responses, in terms of form and information focus, that teachers provide to student responses within interaction sequences?

   (f) are there differences in the types of cognitive knowledge (i.e., declarative, process, procedural, conditional or academic task procedures) focused upon within interaction sequences?

   (g) are there differences in the perceived instructional purpose of interaction sequences (i.e., assessment versus assistance functions)?

The third research question specifically considered how the questioning behaviors addressed above were positioned in the various phases of the skill lesson.

3. When comparing the positioning of instructional sequences with various form, content and purpose characteristics within the structural context (phases) of the reading skill lessons of more and less effective teachers,

   (a) do phases and instructional sequences within different phases vary in length?

   (b) are there differences in where sequences that contain elicitations with different content foci occur within lesson phases?

   (c) are there differences in the informational content foci of instructional sequences in different lesson phases?

   (d) are there differences in the teacher evaluation and elaboration responses in interaction sequences in different phases?

   (e) are there differences in the placement of sequences of varying structural form (simple vs. extended, particularly) in lesson phases?

   (f) are there differences in the cognitive knowledge foci of sequences in various lesson phases?

   (g) are there differences in the instructional purposes of interaction sequences in various lesson phases?

SAMPLE SELECTED FOR THE STUDY

The sample of teachers selected for the study was chosen from the twenty-two classrooms included in the study of teacher explanation during reading instruction conducted by the Teacher Explanation Project (Duffy & Roehler, et al., 1986c), at the Institute for Research on Teaching at Michigan State University during the 1982-83 academic year. For this study of questioning practices, twelve teachers were selected post hoc from the original pool of twenty-two.

The six most effective and the six least effective were chosen by using a definition of effectiveness which includes two components. These are (1) the awareness of students following skill instruction about what was being learned, when it would be useful and how to perform the skill; and (2) student achievement growth in reading. The procedures used to operationalize this definition and use it as the criterion for teacher selection are described in Chapter III.

In effect, it was known at the outset that there were differences in some of the instructional behaviors of these teachers, i.e., their use of explicit explanations through modeling (see Duffy & Roehler, et al., 1986b; Duffy & Roehler, et al., 1986c). The research task in this study involved examining more and less effective teachers' skill lessons to determine if there would be differences that might be related to questioning practices.

DESIGN OF THE STUDY

To consider questions about teacher questioning practices and how those might vary for more effective and less effective teachers of low reading groups, a variety of methodological procedures were used that offer ways of identifying and descriptively characterizing teacher-student verbal interaction sequences during instructional events. For the purposes of this study, the insights and theory of conversational discourse analysis, combined with descriptive

statistics and micro-ethnographic techniques (Au & Mason, 1982, 1983; Bean, 1985; Cicourel, 1974; Erickson & Shultz, 1982; Green & Wallat, 1981; Gumperz & Herasimchuk, 1972; Heap, 1982; Mehan, 1979a), were used to examine lesson transcripts and compare the two teacher groups. Methods were adapted as needed to characterize the particular interaction discourse elements discovered in the context of the reading skill lesson.

Collection of the Data.

The data base for the study consisted of the audiotapes and typed transcripts of three to five observed reading skill lessons taught during the 1982-1983 school year by each of the twelve teachers. A total of fifty-one lesson transcripts were descriptively analyzed. Transcript analyses for this study were conducted post hoc to the lesson data collection completed during the Teacher Explanation Project's study of explicit teacher explanation (Duffy & Roehler, et al., 1986c).

Data Analysis Procedures.

Coding schemes for data analysis were developed as part of a pilot study and subsequently refined and extended as analysis of the full data set proceeded. The pilot study is briefly described below.

The pilot study (Vavrus, 1983). A pilot study of teacher questioning behaviors was conducted using a random sampling of the twelve fifth grade teachers of low reading groups designated as more effective and less effective from

the Teacher Explanation Project's complement of twenty-two teachers.

The purpose of the pilot study was to investigate whether differences in teacher questioning behaviors, specifically the frequency, function, content focus and positioning of elicitations during reading skill lessons, would be found in the lessons of teachers designated as more and less effective in producing student awareness and achievement outcomes. The pilot also provided an opportunity to investigate the types of instructional interaction sequence patterns that characterize skill lessons. The broad research question, "What is the role of teacher questioning behaviors in the skill lessons of more and less effective fifth grade teachers of low reading groups?" guided the pilot. It was anticipated that findings from the pilot could then be used to pose more specific questions for the full study.

The sample of teachers used in the pilot study consisted of four fifth grade teachers of low reading groups--two more effective and two less effective. Two were randomly chosen from the six more effective teachers, and two were randomly chosen from the six less effective teachers selected from the original sample of twenty-two teachers in the Teacher Explanation Study (Duffy & Roehler, et al., 1986c) described earlier. The sampling procedure, which is detailed in Chapter III, was the basis for selecting teachers for the pilot and subsequent full study.

The data base for the pilot study consisted of the audiotapes and typed transcripts of taped discourse obtained from five observed reading skill lessons taught during the school year by each of the four teachers. Nineteen of twenty lessons were used for the pilot. One lesson was eliminated due to equipment malfunction during audiotaping.

The sequential description overviewed below summarizes the data collection and analysis procedures which were the basis of the procedures detailed in Chapter III. The sequence developed was based primarily on qualitative transcript analysis techniques advocated by Erickson & Shultz (1982) for analyzing the event and participation structures of interactions, as well as those described by Mehan (1979a) and Heap (1980, 1982) for analyzing teacher-student verbal interaction sequences and discourse events.

Developing the conventions for teacher-student interaction sequence identification was one of the pilot's primary tasks. Heuristics followed for sequence identification were two. (1) The beginning of a sequence was marked with a teacher elicitation requesting information or a particular student behavior. (2) Sequence completion was signalled by some kind of teacher feedback--usually in the form of an evaluative comment or elaboration of the student response, indicating that the information or behavior had been satisfactorily obtained. The various classification codes of sequence structural form, instructional purpose and topical content focus which are described fully in Chapter III were

identified and defined at that time.

Also, a broad range of elicitation types, in terms of content focus and perceived function, were identified. After tallying the occurrence of various elicitation types, those of highest frequency across the four teacher sample were selected as the focus for the full study. Using the definitions stated earlier, these were product, process (and usefulness), and task procedural/academic management elicitations.

Additionally, it was determined during the pilot that an efficient means for examining the positioning of interaction sequences and discourse elements within the lesson framework would be to characterize lessons in terms of their principal instructional events, designated as "phases" for this study. Phases identified based on their recurrence in the pilot lessons included an introduction, presentation, practice--subdivided as guided, recitation or independent, reviews, and lesson closure. Once lesson phases were identified, it became possible to develop a system for visually mapping where discourse events occurred within the lesson. Further, phase identification allowed for tallying the frequency of sequences and their component elements as they were positioned within the lesson, as well as for the lesson overall.

The findings of this preliminary descriptive examination of four teachers' questioning behaviors suggested that elicitations were, in fact, used differently by these more

effective and less effective teachers during reading skill lessons. While all four teachers consistently posed large numbers of elicitations that requested product information, the two more effective teachers showed interaction sequence patterns that distinguished them from the less effective teachers. Differences were indicated in how the teachers used process, usefulness and procedural/ academic management elicitations. Further, differences between the two teacher groups were noted in how teachers structured lesson phases, particularly in terms of the characteristics of practice and review interactions with students. Finally, there were indications that many of the teacher evaluations to students' responses in the interaction sequences of the more effective teachers were qualitatively different from those provided by the less effective teachers.

In summary, the results of the pilot study provided support for conducting the more extensive study of the skill lesson questioning behaviors of more and less effective teachers of low reading groups. The pilot analysis showed that the instructional discourse analysis methods borrowed from Mehan and others, and which I applied with modifications to a specific kind of instructional event in reading--the skill lesson, offered viable means for characterizing teachers' questioning behaviors and gaining insight into the functional role of those behaviors during instruction.

Transcript data collection and analysis procedures for the full study. From the analysis of the pilot study data, the procedures used to qualitatively examine the complete corpus of transcript data in the full study of twelve teachers' lessons were established. Specifically, the data were examined using a multi-faceted qualitative collection and analysis system. The format of that system, detailed in Chapter III, is outlined as follows.

First, the typed transcripts were prepared in the format suggested by Mehan (1979a) for viewing classroom interactions. This three column format records classroom discourse into initiations, responses and evaluations. Regarding teacher discourse, the initiations column housed initiated expository sequences (identified as "Teacher Monologues"), as well as teacher-initiated interaction sequences. I expanded the function of the final column to include elaborations on student responses which did not qualify as initiations. An example of the format is shown in Appendix 3A.

Second, each typed transcript was read while listening to the corresponding audiotape to identify initiations which function as elicitations in the discourse of the lesson but may not appear as such in print because of grammatical conventions governing interrogative structure. This step was essential to accurately make notations regarding intonation and pause patterns.

Third, the reformatted transcripts were read a second time to identify the primary discourse phases or episodes (e.g., introduction, instructional explanation, practice, etc.) in each lesson (Erickson & Shultz, 1982) and the instructional events within those episodes.

Fourth, within each identified instructional phase, interaction sequences were identified. The coding schemes developed to characterize the content foci, structural forms and instructional functions of sequences and discourse elements (i.e., elicitations and evaluations) were applied at this point in the analysis. This stage focused on identifying patterns of questioning behaviors/elicitations for each teacher, comparing those patterns across the group of effective teachers and the group of less effective teachers, and then comparing the two groups. When sequence identification was completed, it was possible to time the entire lesson, noting phase and sequence initiation times.

Fifth, adapting Erickson & Shultz's (1982) model for depicting participation structures, visual maps of the elicitation behaviors of lesson participants in relation to the overall structure of the skill lesson were developed for each teacher. The positioning of interaction sequences within the structure of the lesson was also plotted on a time line of the lesson. A sample map appears in Appendix 3B. The profiles were then analyzed by listing patterns that emerged as consistently appearing over time to develop a composite profile for each teacher. The profiles of the

more effective and less effective teachers were then compared to describe the similarities and variations within each group and between the two groups.

Finally, the overall lesson and lesson phase frequency data, available from use of the several coding schemes, were analyzed. Weighted averages per category per lesson for each teacher were computed. The six weighted lesson averages for the more effective teachers and the six for less effective teachers were collapsed into an average per category per lesson for each group and compared. To statistically test for significant differences between the two teacher groups in terms of average numbers per lesson of sequences, elicitations, feedback statements, and length of lessons (in terms of time and number of transcript lines of teacher talk), the Mann-Whitney U test was used. To statistically compare the two groups in terms of categorical occurrence of kinds of sequences, elicitations and evaluations at the lesson level, two-way, repeated measures analyses of variance (ANOVA's) was used.

The results of the data analysis are fully discussed in Chapter IV. Sequence examples from the lesson transcripts are presented in the appendices to illustrate use of the coding schemes. By analyzing patterns of teacher elicitations in discourse interaction sequences, the results of this study suggest important functional roles for teacher questioning in reading skill instruction.

ASSUMPTIONS

The following assumptions underlie this study:

(1) Questioning behaviors/elicitations are not isolated instructional events but are embedded in context-specific social interactions that develop between teachers and students throughout the instructional episode (Heap, 1982; Mehan, 1979a). While usually initiated based on the teacher's content agenda for the lesson, the structure and content foci of interaction sequences can be influenced by student responses and how the teacher evaluates those responses. In other words, student verbal behaviors have a mediating effect on teacher verbal behaviors (Doyle, 1979, 1983; Hargreaves, 1984), and hence, on aspects of the character of interaction sequences, which assigns student behavior an active rather than passive role in instructional events. This means that a reciprocal relationship exists during instruction between teachers acting to influence student learning and students' actions influencing teachers' teaching (Palincsar, 1984; Tom, 1984).

(2) The verbal interactions between the teacher and students within the context of the reading lesson may promote or limit student learning (Roehler & Duffy, 1981; Tharp & Gallimore, 1983).

(3) Because instructional episodes are social events between the teacher and students, it is possible for a participant's verbal behavior to serve more than one function

simultaneously. Heap (1982) calls this the assumption of multi-functionality.

(4) The sequential placement of elicitations in instructional phases and, at a finer level, in interaction sequences within phases may have consequences for how the function of an event, such as an elicitation, is identified and whether the event successfully achieves its perceived function (Heap, 1982). This has also been described by Tom (1984) as " the situational assumption" (p. 58). He notes that <u>when</u> a teaching behavior is used can be more important than either how often it occurs or how well matched it is with curricular outcomes.

(5) Teacher effectiveness is related to the explicitness of the instructional talk employed by the teacher to explain academic tasks (Roehler & Duffy, 1981; 1984). To date research on explicitness (Roehler & Duffy, et al., 1984; Roehler & Duffy, 1984; Duffy & Roehler, et al., 1984, 1986c) has focused on teachers' instructional statements of explanation during informational presentations about the processes of reading and during interactions with students following those presentations. I believe that explicitness is also a desirable characteristic to consider in the study of questioning practices. As summarized by Roehler and Duffy (1984),

> Past research on comprehension instruction has examined the <u>tasks</u> students are asked to perform. We examine what teachers <u>say</u> to students about the process of doing the task, because student outcomes depend not only on

> what they do but on what the teacher says to them about what they do. While students mediate the teacher's instructional talk and restructure it in terms of prior knowledge, the extent and quality of this restructuring is influenced by what teachers say and the clarity with which they say it. Hence, we agree with Mosenthal (in press) who says that "reading researchers tend to assume that comprehension is constrained only by text variables and/or by reader prior knowledge variables. They overlook the fact that comprehension can be constrained also by the organization of the teacher's lessons. (pp. 266-267)

(6) Reading skills can be actively or directly taught in structured lessons prior to creating situations where students must apply them in real text reading contexts.

LIMITATIONS

Recognizing certain limitations is in order to avoid inappropriate expectations and generalizations when interpreting the results of the study. The major limitations are the following.

1. The nature of the methodology used limits the ability of the study's findings to be generalized beyond the population represented by the sample of teachers. Further, this study has narrowed the study of questioning to a specialized form of reading instruction, the skill lesson, and results are restricted to the functional role of teacher questioning behaviors in that context. However, it is in order to offer tentative inferences and suggest implications about the functional role of teacher elicitations for similar instructional contexts within reading and in other

curricular areas that provide direct instruction in skills. In this sense, the study provides baseline information to inform further research in this area.

2. Using a non-participant observer as the data collection instrument may have altered the social behavior of the participants studied during their reading lessons. To minimize this possibility, each classroom was assigned a single observer for the duration of the school year. Furthermore, this problem is offset by the opportunity actual discourse analysis provides to gain understanding of the process of verbal teaching and learning of reading skills in the context of the actual classroom. Additionally, collecting data during actual observations of classroom interactions provides a sense of credibility about the teaching of reading skills not found in laboratory-based research.

3. The use of transcripts of audio-taped lessons limits the scope of the study to the examination of questioning as a verbal discourse event. Conspicuously absent is sufficient data about the non-verbal interactions between teacher and student participants that could be available were lessons recorded on videotape. It was possible, however, to develop some sense for what was non-verbally occurring in lessons via sounds and teachers' placement of pauses on the audiotapes on the basis of the researcher's prior experiences as a classroom teacher and active participation in the collection of the lesson data used for the study.

4. The relatively small size of the sample studied requires that the results of statistical tests for significant differences be interpreted cautiously. Instead, they can serve as indicators of areas of teacher questioning which warrant further exploration with a larger teacher population.

ORGANIZATION OF THE REMAINDER OF THIS DISSERTATION

The research reported in this dissertation is organized into four major chapters with the inclusion of appendices. Chapter II provides a literature review of related research. Chapter III describes the design of the study, focusing on data treatment, and analysis procedures and methods. Appendices provide examples of lesson sequences representative of various interaction patterns; samples of data collection and analysis forms; a sample teacher transcript and data set; a visual lesson profile of a lesson selected from each teacher's set of lessons; and other relevant samples of how data were depicted for the analysis. In Chapter IV the findings are described and interpreted. Finally, discussion of the results, implications and recommendations for continuing this direction of research on questioning is the focus in Chapter V.

CHAPTER II

REVIEW OF THE LITERATURE RELATED TO TEACHER QUESTIONING PRACTICES DURING READING INSTRUCTION

This study examined the role of teacher questioning practices in reading skill lessons as they naturally occurred in the classrooms of six more effective and six less effective fifth grade teachers of low reading groups. This chapter selectively reviews representative studies from the literature on questioning, focusing on how teacher questioning practices have been characterized generally and in reading instruction. Specifically, the review is divided into five main sections.

Section 1 reviews taxonomies or classification systems that have been developed for teacher-posed questions. Section 2 reports the major findings related to questioning practices from process-product research on effective teaching behaviors and their relationships to student achievement. Section 3 examines teacher questioning behaviors in relation to comprehension training studies and student cognitive processing. Section 4 surveys sociolinguistic and the ethnography of communication studies that address the role of questioning practices in classroom interaction sequences. Section 5 describes important issues in instructional questioning research.

The literature review focuses on teacher-guided questioning, not on textbook (or adjunct) questions (for a review of questions in written materials, see Andre, 1979) or student questioning behaviors, except where the occurrence of such behaviors prompted teacher elicitations. Some topics are discussed more in depth than others depending on the importance of each area in establishing baseline information for this study. The summary to each of the five sections includes a brief notation regarding how the research reported therein applied to this study.

SECTION 1:
Classification Systems for Types of Teacher-posed Questions

This section considers taxonomies or classification systems that have been developed to characterize teacher-posed questions. Researchers use taxonomies to place questions in a hierarchical arrangement of categories or "levels". Each category defines a question in terms of its response; that is, what is needed to supply the appropriate answer (Hyman, 1979) or as Andre (1979) characterized it, "the nature of cognitive processing required to answer a question" (p. 282).

Questioning taxonomies range from general to curriculum-specific (Gall, 1970). This review focuses on taxonomies used in research to specify types of elicitations used by teachers during reading instruction. They are

grouped here as follows: (1) cognitive complexity; (2) sources of information; and (3) cognitive functions. A discussion of the three types and issues involving the use of taxonomies in questioning research concludes the section.

Cognitive Complexity Taxonomies

Perhaps the most well-known questioning taxonomy (or classification system) based on cognitive complexity is described by Bloom and his colleagues (Bloom, et al., 1956), and modified by Sanders (1966). These taxonomies are reviewed extensively elsewhere (Gall, 1970; 1972; Hyman, 1974). In the Taxonomy of Educational Objectives (Bloom, et al., 1956), Bloom developed a system for analyzing questions asked during text-based comprehension lessons using six cognitive levels: knowledge (factual), comprehension, application, analysis, synthesis and evaluation (Note 1). Studies using this scheme have generally contrasted the first level (knowledge) to one or a combination of the remaining five (Andre, 1979).

According to Gall (1970; 1972), cognitive complexity levels in most taxonomies generally include recall, analytic thinking, creative thinking, and evaluative thinking. For reporting purposes, researchers use taxonomies of this type tend to simplify findings into "lower order" and "higher order" levels of cognitive complexity. Typically, lower order represents recall or recognition of verbatim, factual information retrieved from memory, and higher order represents inferential and evaluative thinking processes.

Defining higher order levels, however, tends to be highly subjective and is often variable depending on the taxonomy (Andre, 1979; Bean, 1985). Andre (1979) summarized the rationale behind the lower-higher order distinction:

> Factual questions are believed to involve less complex cognitive processing than questions requiring more than direct memory. Questions that require more than simple direct memory are believed to involve more complex cognitive processing. (p. 282-83)

Cognitive complexity taxonomies have been developed that base each category on the cognitive processing activity needed to answer a particular question. For example, Guszak (1967) and Barrett (1976) developed classification schemes to analyze the questions teachers asked students during text-based reading comprehension instruction. Both schemes are specialized modifications of Bloom's taxonomy (Gall, 1972). The levels of questions in each are characterized by a high degree of specificity regarding the content information that should be included in responses.

Guszak's Reading Comprehension Question-Response Inventory (1967) tries to capture the kinds of reading-thinking skills teachers require students to use with their reading assignments. Barrett's Taxonomy of Reading Comprehension (1976) is more descriptively complex than Guszak's scheme. Barrett modeled his categories more closely after Bloom (1956). Compared to Guszak's scheme, Barrett's identifies specific cognitive skill areas associated with reading (Note 2). Because of this

precision, Barrett's taxonomy is more widely used to study levels of text comprehension, particularly for older readers. Nevertheless, Gall (1972) observed that both Guszak and Barrett clearly demonstrate the complexity of comprehension processes:

> Their taxonomic work suggests that reading comprehension is not a unitary cognitive process, but instead involves a number of different cognitive processes (recall, analysis, evaluation, etc.). If this is true, then perhaps teaching for good reading comprehension is a more complex task than we have been accustomed to imagine. (p. 6)

Here Gall alludes to what has been a major problem for most taxonomies focused on cognitive complexity. They are often too complex to be of practical use; that is, they tend to be quite complicated structurally, often making them difficult for teachers to apply. In a critique of taxonomies of this kind, Bean (1985, p. 339) noted, "the more elaborate the scheme, the more "fuzzy" demarcations become between question types".

Numerous studies using cognitive complexity classification systems are reported in the literature. Typically, researchers observe classroom instruction and tally the occurrence of teacher questions. Gall (1970; 1972) reviewed many of these and concluded, "research spanning more than a half century indicates that teachers' questions have emphasized facts" (1970, p. 712). His synthesis of findings showed that 60 per cent of teachers' questions asked students to recall facts, 20 per cent were "think"

questions, and 20 per cent were procedural (1970). Interestingly, researchers who have set out to counter Gall's findings in the 1970's and 1980's have found essentially the same thing. Two studies (Guszak, 1967; Hare & Pulliam, 1980) focused on classroom reading instruction illustrate.

Guszak (1967) observed elementary reading group instruction in twelve second, fourth and sixth grade classrooms to assess "the state of reading-thinking skills development." (p. 227). Using his Reading Comprehension Question-Response Inventory, he analyzed transcripts of roughly five hours of observed reading group time per class by tallying questions at each level and computing percentages. Overall, he found that teachers asked readers over 70 per cent recognition and recall questions related to literal comprehension, with highest percentages occurring in second grade (78.8 per cent compared to 64.7 per cent for fourth grade and 57.8 per cent for sixth grade). When he examined the "congruence" or reciprocity between teacher questions and student responses, he found that it was greatest for the recall (93.9 per cent) and recognition (90.3 per cent) categories, and only 75 per cent for inferential questions. Second grade teachers were highest in congruence because of the predominance of lower level questions. He observed:

> The second grade teachers tended to question more precisely than did the upper grade teachers in that they questioned frequently about

> the factual material on a given page. While the upper grade teachers seemed to question specific factual bits also, it appeared that they lacked the control over the story details because of the difficulty of the memory task created by the greater quantity of words . . . [t]he upper grade teachers accepted as congruent certain responses which were indeed incongruent. The second grade teachers had no such problems because of the readily apparent answers in the simple reading materials. (p. 231)

Guszak took these findings as evidence that students "have learned quite well to parrot back an endless recollection of trivia" (p. 234)--students essentially tell teachers what they want to hear.

Dillon (1982a) reported similar findings for the lack of correspondence between teacher questions and student responses in high school discussion classes (49.8 per cent congruence), especially for higher level thinking questions. He concluded that contrary to prevailing opinion on the perceived value of higher level questions as stimulants for student thought, "ask a higher-level question, get any-level answer." (p. 549) Additionally, both Guszak and Dillon noted the relative brevity of student responses, especially to higher level questions.

A recent verification study using Guszak's categories was conducted by Hare and Pulliam (1980) to up-date the state of elementary teachers' questioning practices. They asked first through fifth grade teachers to write questions and corresponding answers for text passages as they would ask them in their reading groups. Analysis of

question-response patterns indicated over 70 per cent at the recognition-recall level despite differing methodology for data collection. Hare and Pulliam demonstrated that "teachers have not significantly changed their questioning habits in the last decade." (p. 72)

Although not addressing questioning directly, observational studies of reading instruction (Durkin, 1978-79; Duffy & McIntyre, 1982), conducted since Guszak's pioneering work, report a predominance of assessment activities in elementary classrooms. This seems to further support that much of the teacher-student interaction during text-based comprehension lessons is distinguished by the literal level focus of elementary teachers' questions.

In a recent critique of Guszak's work, Pearson (1983) collapsed Guszak's categories into those with "literal emphasis" (i.e., recall and recognition) and those with "non-literal emphasis". He then compared the resulting percentages for each grade level according to high, average and low reading groups and found that while second grade teachers tended not to differentiate their questioning for readers of differing abilities, intermediate grade teachers questioned high and low ability readers in distinctly different ways. Low group readers were asked a greater proportion of literal questions compared to high ability readers who received substantially more non-literal questions. Pearson (1983) stated:

> Examined from the perspective of a student progressing though the grade levels in a school, whereas a high or average-ability student can look forward to a progressively changing diet of questions, a low-ability student can look forward to more of the same. (p. 278)

Sources of Information Taxonomies

Contemporary research on question types focuses on the sources of information students draw on when responding to text-based comprehension questions (e.g., Au, 1979; Bean, 1985; Pearson & Johnson, 1978; Raphael & Gavelek, 1984; Wixson, 1983b; for a review, see Andre, 1984). Much of this work is based on Pearson and Johnson's (1978) classification scheme in which questions are categorized as text explicit, text implicit or script implicit. They describe their taxonomy as follows:

> Textually explicit questions have obvious answer right there on the page. Some would call them factual recall questions. Textually implicit questions have answers that are on the page, but the answers are not so obvious [inferential]. For "scriptally" implicit questions, a reader needs to use his or her script [experiences] in order to come up with an answer. (p. 157)

In other words, the relationship between a text-based question and its response is one of "reading the lines," "reading between the lines," or "reading beyond the lines." (p. 176)

Pearson and Johnson viewed the relationship between questions and answers as three-way: the interaction of the question, the text and the reader's prior knowledge. In combination, these determine the kind of cognitive

processing the reader must do to comprehend the author's message (Andre, 1984). As interpreted by Wixson (1983b),

> The reader's role in the interaction among reader, text, and question is observable through the reader's answers to the questions asked. Characteristics of the reader such as interest, prior knowledge, and reading skill interact with the question and the text to determine the ultimate relationship. Thus, when the reader is taken into consideration, the interaction which actually occurs may differ from the interaction which was anticipated on the basis of the question-text relationship. (p. 288)

Many studies use the Pearson and Johnson (1978) taxonomy to study teachers' questioning during reading instruction (Bozsik, 1983; Hare & Pulliam, 1980; Raphael, 1982; 1984; Raphael & Pearson, 1982; Raphael & Wonnacott, 1985; Wixson, 1982; 1983a). These studies have been mostly interested in questioning during story comprehension lessons and how teachers develop students better able to answer teacher-posed comprehension questions.

Raphael's work (1982, 1984; Raphael & McKinney, 1983; Raphael & Pearson, 1982; Raphael & Wonnacott, 1985) represents the most concentrated use of the Pearson and Johnson taxonomy. In a series of studies of a procedure (i.e., QARs--Question-Answer Relationships) developed to train students to monitor their comprehension while reading text through self-questioning, Raphael and her colleagues demonstrated students' sensitivity to the three question-response relationships described by Pearson and Johnson (1978). She noted, however, that better readers are

more sensitive to differentiating sources of information, seeming more proficient than poor readers at using the appropriate strategy to locate answers to text-based questions (Raphael & Gavelek, 1984).

In addition to replicating Guszak's study, Hare & Pulliam (1980) used the Pearson and Johnson taxonomy to investigate how teacher's focus on sources of information in story-based lessons. Their study of the questioning practices of first through fifth grade teachers showed that the sources of information most often used were text implicit and scriptally implicit. However, this finding was not supported by Gambrell (1983) in her study of wait-time during third grade reading comprehension instruction or in an observational study by Bozsik (1983).

Gambrell (1983) reported that in basal text-based reading lessons taught in nine classrooms, teacher posed questions which were 63 per cent text-based and 37 per cent scriptal, with low groups receiving a disproportionately greater share of the text-based questions. Additionally, Gambrell was a bit disturbed by her significant finding that teachers waited longer for students to answer text-based questions. Her findings suggest that actual classroom practices do not conform to prevailing theory regarding the greater cognitive demands of higher level questions. Given the time requirements of higher level thinking, Gambrell observed, "Elementary students are rarely allowed the

opportunity to engage in higher level thinking during reading comprehension instruction" (Gambrell, 1983, p. 80).

Bozsik (1983) used the Pearson & Johnson taxonomy to examine teacher's questions and students' responses in grades three, four and five during pre- and post-story reading in comprehension lessons. Students in classrooms at each grade level were grouped by ability into high and low reading groups. She identified question-response sequences (interaction blocks) based on length of interactions dealing with a single topic, and tallied the number of questions of each type for six blocks. Additionally, she classified students' responses as supported (based on text examples or personal experiences) or unsupported (failure to qualify a response). Bozsik's results across sequences of varying length consistently showed that these teachers posed mostly text explicit questions. Further, the low reading groups received more of these questions and were not necessarily required to support their responses to the extent found in the high groups. Interestingly, low group readers supported more of their responses during pre-reading when it appears they could appeal to their personal experiences to answer questions and not be forced to access information from the text.

Wixson (1983a; 1983b; 1984) used the Pearson and Johnson taxonomy in two studies of question-answer interactions following passage reading. In the first experiment (1983a), average and above average fifth graders

read short narratives and responded in writing to sets of questions which were either text explicit, text implicit, schema-based (scriptally implicit) or text irrelevant. Results showed that different kinds of questions significantly influenced the interaction between reader and text in terms of information recalled. Text explicit questions produced fewer inferences than the other question types and vice versa.

In Wixson's second study (1983b; 1984), she incorporated the importance of information to the passage in organizing the sets of questions for students to respond to following reading. This time both text explicit and text implicit questions were included in each set of post-passage questions. One week after initial reading and question answering, students were given a recall test during which they had to prepare answers to questions at all levels, as well as free recall the story. Results indicated that students recalled information best if they had directly answered questions about it, regardless of that information's importance. Echoing Guszak's remark from sixteen years earlier (Guszak, 1967), Wixson concluded, "Apparently children learn and remember best those items of information that are directly questioned, regardless of whether they are important or trivial" (Wixson, 1983b, p. 291).

Cognitive Function Taxonomies

Taba (1965) developed a classification system based on the idea that questions and questioning strategies help children develop their comprehension abilities. She coined the term "cognitive commerce" to describe how the child's interaction with environmental influences promotes active use of cognitive processes. In this sense teacher questioning is influenced by the specific purpose or function it serves within the "immediate interplay of verbal discourse" (Hyman, 1974). To determine question function, one must analyze questions within interaction sequences.

Several researchers (e.g., Bean, 1985; Hyman, 1974; and Ruddell, 1974; 1978; Mehan, 1979a; Ruddell & Haggard, 1982) used Taba's ideas to develop classification schemes describing how teachers use questioning to activate different levels of cognitive processing. To illustrate the multifunctionality of purpose which accompanies a teacher question, a cognitive function taxonomy is usually coupled with levels of questions and/or information source. Hyman (1974) stated:

> To decide which cognitive function a question performs, it is absolutely necessary to view the question in the context of the ongoing interaction. Context is more important in classifying function of the question than it is in classifying the productive thinking [referring to Guilford's model of the intellect] elicited by a question. Furthermore, it is possible for a question to have more than one function simultaneously. (p. 308)

In stressing the role of context and the interactive nature of questioning, Hyman anticipated the present focus of sociolinguists and educational ethnographers on discourse analysis (see Section 4). Also, Hyman identifies an important issue in questioning research--question multifunctionality--which will be addressed later in this chapter.

Because the classification scheme developed by Mehan (1979a) was of central importance in developing the elicitation coding system used in this study (see Chapter III), Mehan's taxonomy will be overviewed first as an example of the cognitive function direction in questioning research.

Mehan (1979a) developed a set of categories to characterize the cognitive function of elicitations in classroom discourse. He identified four different kinds: (1) choice elicitations--"the respondent is called upon to agree or disagree with a statement provided by the questioner" and "contains the information needed in order to form the reply"; (2) product elicitations--"the respondent is asked to provide a factual response such as a name, a place, a date, a color"; (3) process elicitations--the respondent is asked for an opinion or interpretation"; and (4) metaprocess elicitations--"students are asked to be reflective about the process of making connections between elicitations and responses" by "formulating the grounds of their reasoning" (pp. 43-46).

Acknowledging the relationships between these categories and those of other taxonomies in terms of identifying the kind of cognitive processes used by the learner to respond (for a discussion, see Mehan, 1979a, p. 184-85), Mehan stresses the scheme's distinctiveness in that it is designed to identify any utterance in interactive discourse, not only questions determined by grammatical criteria, which performs the function of eliciting a response. Additionally, he noted that determining the meaning of an elicitation was best accomplished by considering it as part of "interactionally accomplished sequences" which "allowed the participants' prospective and retrospective treatment of action to decide meaning", rather than by viewing elicitations as autonomous speech acts.

The cognitive function taxonomies developed by Hyman (1974) and Ruddell (1974; 1978) are quite similar and more focused on the kind of behavior the teacher engages in when posing a question in a story comprehension lesson. Hyman's scheme includes five question categories: focusing, foundation, extending, lifting and promoting. Ruddell describes seven categories of "questioning strategies" including the following: focusing, ignoring, controlling, receiving, extending, clarifying, and raising. He has used them specifically to analyze teachers' questioning practices during elementary reading instruction in story-based lessons. Bean (1985) reports using a scheme quite similar to

Ruddell's and defines terms similarly (see Bean, 1985, p. 348).

Two types of questioning strategies not accounted for by Ruddell's taxonomy, but which quite prevalent in the data analyzed for this study, are captured in Hyman's "Foundation Questions" and "Prompting Questions" categories. Foundation questions function

> to elicit responses that will serve as the basis of a more complex question or discussion. They might request, for example, connecting evidence or criteria for an explanation schema, an evaluative judgment schama, or a divergent-thinking operation. The questioner asks the question in such a way as to bring out the evidence of criteria to be used in a more complex though operation. The question may seek its information through a review of a previous session, a recapitulation of the ongoing discourse, or the presentation of new information not yet offered. Example: Will you now sum up the points we've made so far about a rhombus, so we'll be ready to compare it with a triangle. (p. 302)

Prompting questions describe the efforts of the questioner to promote the flow of conversation and "keep the discourse from bogging down" (p. 304). Both of these categories reflect questioning that teachers might use to establish cohesiveness in a lesson.

According to Ruddell (1978), however, the four most prevalent strategies for developing students' comprehension processes are focusing, extending, clarifying and raising.

> Focusing enables the teacher to immediately establish a mental set, a purpose for reading. Extending allows the teacher to elicit additional information on the same subject at the same comprehension level. Clarifying enables the teacher to encourage returning to a

> previous response for further clarification, explanation, or redefinition. Raising allows the teacher to obtain additional information on the same subject but at a higher comprehension level.

There were not many studies available that use taxonomies from this group by simply tallying question frequency in isolation of other factors (Gall, 1972). Also, the kinds of questioning dimensions receiving emphasis for cognitive function are more typically explored in ethnographically-oriented descriptive studies of one or two classrooms (e.g., Bean, 1985; Mehan, 1979a; for reviews, see Evertson & Green, 1986; Green, 1983a; Green & Smith, 1983). For example, Mehan developed his classification scheme during a year-long ethnographic study of a kindergarten classroom and then used it to analyze teacher-student discourse and determine participants' roles in a variety of lessons across the school day. Bean (1985) and his colleagues used a cognitive function taxonomy to create discussion maps (Green & Wallat, 1981) of a single first grade basal reader lesson. Section 4 below considers studies grounded in the sociolinguistic tradition.

Ruddell (1978), however, reported using his classification scheme to study the question-response interactions of 24 primary grade teachers. He combined cognitive function with complexity level to analyze both questions and their responses. Results showed factual questioning in the most dominant role, accounting for 68.2 per cent of teacher

questions. Interpretive questions accounted for 31.8 per cent of total questions. When combined with function, the extending strategy was most often used with factual questions (57.5 per cent), and the raising strategy most often with interpretive questions (49.7 per cent). When considered separately, focusing and extending accounted for 71 per cent of all strategies used. When student responses were considered, Ruddell found the same lack of congruence between questions and responses noted earlier (Dillon, 1982a). Students responded at a factual level in 85.9 per cent of their total responses--a rate higher than the number of factual level questions posed by the teachers. Students gave teachers only 14.1 per cent interpretive responses to their questions at that level. Ruddell (1978) noted: "Obviously, a number of the teacher's questions at the interpretive level were not handled effectively by the child's responses" (p. 117). He recommended that teachers should try to broaden the focus of their questions beyond the factual level by posing them in a variety of ways.

Discussion

In this section the three types of classification systems are discussed in terms of issues surrounding the use of taxonomies to study teacher questioning behaviors.

Guszak's 1960's questioning research (Guszak, 1967) illustrates the major finding repeatedly emerging from taxonomical studies as a whole: teachers avoid complexity

when teaching reading and stick close to details presented in the text. Several researchers confirmed this to still be true in the 1980's. In a similar vein, studies using the Pearson & Johnson (1978) taxonomy found that when viewed as question-response relationships, teachers' elicitations tended to seek information directly stated in the text. Ruddell (1978) added that in terms of questioning strategies, teachers focus and refocus on the topic being discussed or elicit information on the same topic at the same level of comprehension (typically, factual). Reacting to these findings, both Pearson (1983) and Guszak (1983) stressed the need to take a "hard look" at current questioning practices with readers of different ability levels and look more closely at the way questioning patterns might differ relative to the type of content (stories vs. other types of material) stressed through questioning.

In addition to enjoying wide use by researchers, taxonomies have been widely published for practitioners' use in planning comprehension questions to accompany textual reading lessons (cf., Hyman, 1974; Sanders, 1966). Perhaps their greatest value comes in sensitizing teachers to the complexities of providing good comprehension instruction and providing a diet of questions rich in cognitive variety. Cazden (1986) concluded that while categorizing questions according to some scale of cognitive difficulty lacked the precision needed to effectively research classroom questioning, taxonomies were valuable to teachers as heuristic

devices. On the other hand, according to Bean (1985),

> Effective teacher questioning presupposes a high level of awareness concerning ways in which questions may be classified. A teacher must have a finely tuned analytical sense of question types and their correspondence to sources of information used in class. (p. 339)

Further, while most of the suggestions for improving classroom practices derived from research on taxonomies encourage teachers to vary the cognitive level of their questioning and to ask more higher level questions to facilitate higher levels of student thinking (Hyman, 1974; Pearson & Johnson, 1978; Ruddell, 1974), this recommendation has yet to show up in practice, particularly in the reading instruction provided for low group readers.

Andre (1979) and Gall (1970; 1972) urge caution in taking the findings from taxonomical studies too seriously by pointing out that there are a number of problems with their use. The first problem is, there are times when it is not possible to tell whether a student's response, in fact, reflects higher level processing, or may just be recall of a fact read somewhere outside of the lesson context. Gall pointed out, "Cognitive processes are inferential constructs, and therefore cannot be observed directly." (Gall, 1972, p. 6). Hyman (1974) noted this problem particularly for interpreting "why" questions:

> . . . a question is not a memory question or a thought question in and of itself. Rather, only by knowing the context of the lesson can questions be classified." (p. 309)

Another problem is that although there are promising signs from the use of cognitive function taxonomies in conjunction with other schemes, most taxonomies still encourage the assumption that purposes for questions can be determined by analyzing questions in isolation of other discourse elements.

Third, many types of elicitations are never accounted for because they do not "fit" existing categories in a particular taxonomy or they may overlap several categories such that placement is spurious at best (the problem of multifunctionality). Thus, when research studies report "other" as a category of questioning observed, important insights about how instruction is conducted may be lost. Pearson (1983) notes this as a particular problem with the Pearson and Johnson (1978) taxonomy. Mehan (1979a) took this problem into consideration in defining the sequence as the unit of analysis to which he applied his elicitation classification scheme.

Fourth, studies tend to generalize findings on question types to groups of students when teachers' oral questions are usually answered by one student at a time. Andre (1979) points out that if the response "makes" the question in terms of its instructional effects in active processing, then only the student responding benefits. This may account for the equivocal results of many of the effectiveness studies summarized in the next section.

Fifth, most taxonomies have been developed to be as widely applicable as possible across curricular areas. This limits their ability to detect aspects of questioning that may be highly specific to particular content or lesson type. For example, the taxonomies described for reading instruction were developed exclusively with the kind of content processing students must do in text-based story lessons in mind. They may not be as useful for analyzing elicitation-response patterns in other kinds of instructional settings, such as skill lessons, because of the use of word or text examples rather than lengthy text passages for practice.

Finally, in 1970 Gall noted that most taxonomies were designed to investigate the kinds of questions used in actual classrooms. Little research was available at that time to address what teachers should be doing in their questioning practices. Times have changed. As will be shown in the next section, the 1970's and early 1980's were the decades of identifying and prescribing "effective teacher" behaviors.

Summary of Section 1: Classification Schemes

This section presented and discussed several classification systems used to identify and analyze dimensions of teachers' classroom questioning practices, including cognitive complexity, sources of information available to the respondent, and cognitive functions. Several studies were reviewed that used these taxonomies. The major finding is

that most questions posed by teachers assess recall of facts or literal comprehension, while the remainder are either intended to establish student background for the topic of instruction or to clarify procedures and directions for instructional activities. Taxonomies usually represent attempts to understand the kind of thinking teacher questions prompt from students, although some were reviewed that described the teacher's instructional activity. In reading, taxonomies are mostly used study questioning in story-based comprehension lessons where questioning is a more highly visible. Contextualization issues remain a problem because most of these taxonomies cannot easily document how students might be probed in less text-bound reading lessons.

Questioning taxonomies were important to review prior to beginning this study because of the need to locate existing schemes that might be applied to examining teacher questioning in reading skill lessons. In this respect, Mehan's cognitive function scheme was best suited for adaptation to the present study because (1) it viewed questioning broadly as elicitations; (2) it reflected the current research interest in student metacognition; (3) its categories were not as dependent on text materials in describing function and (4) it was specifically developed for use in analyzing lesson transcripts.

SECTION 2:

Questioning Effects and Student Outcomes

This section reviews the major findings related to questioning practices from process-product research on effective teaching behaviors and their relationships to student achievement. Major observational studies of classroom reading instruction are discussed here because they report findings that are informative regarding teacher questioning. Included here is a characterization of questioning components in "direct instruction"--a synthesis model incorporating many of these findings that has been widely applied in various forms to reading instruction. Three areas of process-product findings reviewed here are as follows: (1) effects of higher and lower level teacher questions on student outcomes; (2) general characteristics of teacher questioning incorporated in the direct instruction model based on classroom studies of teacher effects; and (3) specific characteristics of teacher questioning reported in reading instructional studies.

Effects of Higher and Lower Level Teacher Questions on Student Outcomes

Process-product teacher effectiveness studies report numerous findings related to teacher questioning practices (e.g., Anderson, Evertson & Brophy, 1979; Gall, Ward, Berliner, Cahen, Winne, Elashoff & Stanton, 1978; Rosenshine, 1983; Ruddell, 1984). Researchers are particularly interested in the higher level-lower level

distinction for determining effective questions. Results thus far, however, are mixed relative to favoring either lower or higher order cognitive questioning as the best means for promoting higher student achievement. Extensive reviews of process-product studies with findings related to questioning are provided in Brophy & Good, 1986; Winne, 1979; Redfield & Rousseau, 1981; and Rosenshine, 1983).

In a meta-analysis of eighteen experimental and quasi-experimental studies of teacher questioning that distinguished the effects on student learning of lower and higher order questions, Winne (1979) concluded that teacher questioning practices had no effect on student achievement. He classified studies as either "training studies" or "skills experiments". In training studies teacher training was the independent variable with teachers' deciding how they would apply the questioning skills learned in their classrooms. In skills experiments the researcher prescribed to teachers how and when to use particular questioning skills during instruction. For each study, Winne surveyed and tallied those results reported as statistically significant and then counted across studies those results favoring a particular treatment condition. In both classes of studies, there were few differences in student achievement attributable to whether teachers used lower order fact or knowledge questions (i.e., those that call for verbatim or student worded recall of material previously taught by the teacher or read from text) or higher cognitive

or divergent questions (i.e., those calling for student manipulation of previously learned information to create an answer or provide evidence to support an answer).

When discussing these equivocal results, Winne noted that despite his efforts to examine studies that provided similar treatments, there was still great variability in how well treatment implementations were controlled, in the curricular and student context in which experiments were conducted, and in the methodologies used to examine treatment effects. Questioning treatments appeared difficult to implement and replicate because of the complicated effects that other teaching behaviors might have on teachers' use of questions and students' learning from questions.

In contrast, a meta-analysis review of the same set of studies by Redfield and Rousseau (1981) concluded the opposite: teachers' use of "higher cognitive" questions had a measurable positive effect on student achievement. These results replicated Gall's 1970 findings regarding the effects of teacher questioning behaviors on student achievement--that is, the cognitive level of questioning makes a difference. Reasons given to account for the lack of support for Winne's findings centered on the effects of methodology selection in determining the outcomes and conclusions of analytical reviews of this kind. More important, however, student sample size seemed to play an important role in determining the effectiveness of a questioning treatment. Teachers who provided instructional questioning treatments

to smaller groups of students (in the training studies) obtained larger effect sizes than those with larger student samples (in the skills studies where researchers were interested in generating a larger sample size).

The net result of these two "meta-analyses" seems to be no new light shed on the effects of teachers' use of lower or higher order questions on student achievement. The findings of both studies, however, offer strong support for the importance of carefully specifying the context in which questioning is examined for student effects. Redfield and Rousseau appeared to get results favoring higher cognitive questioning by controlling what appears to be an important contextual influence on students' learning from teacher questioning--namely, student group size. Whether groups were greater or less than 64 students seemed to influence effect sizes. The equivocal findings also reflect the larger problem of trying to acontextually describe the influence of teacher questioning on student learning. Finally, these studies suggest that variation in how questions influence students cognitively may be obscured when findings are based solely on frequency counts of isolated question types (Cazden, 1986).

Interestingly, Dillon's study (1982a), examining the degree of cognitive correspondence between teacher questions and statements and student responses, supported Winne's findings of the lack of superiority for higher order cognitive questions over lower order questions. Cognitive

correspondence between question and answer means that

> a question that is inferred to express a given type of cognition is presumed to elicit an answer representing a corresponding type of cognitive process in the student (Dillon, 1982a, p. 540).

Dillon studied correspondence between teacher questions and statements and student responses in high school discussion exchanges to determine if this type of relationship characterized teacher-student interactions. Overall, his findings indicated that teacher questions and statements of lower cognitive types tended to elicit higher cognitive level student responses; higher level questions were more likely to obtain lower level responses; and to the degree that there was correspondence, it occurred mostly for lower level questions. Surprisingly, lack of correspondence was particularly pronounced for statements versus questions (in the grammatical sense). Dillon observed:

> As a separate result, this study finds that questions differ from statements in degree of cognitive correspondence with their respective responses. For lower cognitive types, one-third of responses to questions but two-thirds of responses to statements were at correspondingly higher levels. Overall, half the answer to questions were at the same level as the question but half of responses to statements were at higher levels. (Dillon, 1982a, p. 549)

In discussing these results, Dillon reflected that his results conflicted with findings supporting high degrees of correspondence, especially for higher cognitive questions. To explain reasons for why this might be the case, he focused on the lack of agreement among educational

researchers in defining the term "question". Dillon stressed the tendency to artificially limit studies of classroom questioning on the basis of the interrogative form of utterances, noting that statements in his study seemed to be more effective at generating higher level student responses. Overall, he argues that the ambiguity of findings from questioning studies is largely a matter of failure to agree on definitions. Dillon's findings provide support for Mehan's (1979a) suggestion that classroom questioning might better be viewed broadly in terms of student responses to teacher elicitations rather than student answers to teacher questions.

General Characteristics of Teacher Questioning Included in the Direct Instruction Model Based on Classroom Studies of Teacher Effects

A number of large-scale, classroom-based, experimental and correlational studies of teacher effects have been conducted since the early 1970's. These studies are broad ranging in terms of the instructional teacher behaviors correlated with improved student achievement. Several extensive reviews summarize the common findings from effectiveness studies (Brophy, 1979; Brophy & Good, 1986; Dunkin & Biddle, 1976; Rosenshine, 1971, 1976, 1983; Rosenshine & Stevens, 1986). Various aspects of teacher questioning consistently appear in these discussions as an important area of teacher behavior that affects student learning.

Those aspects of greatest interest for this study are summarized below.

Teacher effectiveness researchers have studied the relationship between the frequency of teachers' use of different levels of questions and student achievement, concluding that the more effective teacher is one who asks more questions with an academic focus (Clark, Marx, Staybrook, Gage, Peterson & Berliner, 1979; Rosenshine, 1976, 1983). Rosenshine (1983) emphasized the higher frequency of teacher-directed questions found in the lessons of more effective teachers when teaching basic arithmetic and reading skills in the primary grades. Also, instructional effectiveness seems most closely associated with asking large numbers of factually-based questions focused on the academic content being learned (Brophy, 1979, 1982; Rosenshine, 1983; Rosenshine & Stevens, 1984, 1986). Support for this was provided by the Follow Through studies (e.g., Stallings & Kaskowitz, 1974) which identified the teacher factual question-student response-teacher feedback interaction pattern as the most beneficial for promoting student achievement. Further, these interaction patterns occurred during lessons in what Rosenshine (1983) called "guided practice", defined as that portion of a lesson (usually following a demonstration of information about the skill) when

> . . . the teacher asks questions and is also standing by to supply assistance and help, if necessary. This guided practice continues

> until the students are confident and respond firmly . . . During successful guided practice two types of questions were usually asked by the teacher: questions which called for specific answers, and those which asked for explanation of how an answer was found. (p. 340)

While this finding derives from initial skill instruction in mathematics and reading, there still seems to be the assumption in Rosenshine's work that this finding is generalizable to all kinds of lessons focusing on skill application.

While generally supportive of Rosenshine's characterization of effective teacher questioning, Brophy & Good (1986) were more cautious about prescribing questions at a fixed level of difficulty because of the inconsistency of results in this area. In their discussion of the characteristics of effective teacher questioning, they stated:

> It seems clear that most (perhaps three-fourths) of teachers' questions should elicit correct answers, and that most of the rest should elicit overt, substantive responses (incorrect or incomplete answers) rather than failures to respond at all. Beyond these generalities, optimal question difficulty probably varies with context. Basic skills instruction requires a great deal of drill and practice, and thus frequent fast-paced drill/review lessons during which most questions are answered rapidly and correctly. However, when teaching complex cognitive content, or when trying to stimulate students to generalize from, evaluate, or apply their learning, teachers will need to raise questions that few students can answer correctly (as well as questions that have no single correct answer at all). (pp. 362-63)

Brophy & Good pointed out the distinction between question difficulty and cognitive level but do not clearly specify that distinction. They concluded that cognitive levels is an area not easily clarified by simple coding of individual questions:

> To develop more useful information about cognitive level of question, researchers will have to develop more complex methods of coding that take into account the teacher's goals (it seems obvious that different kinds of questions are appropriate for different goals), the quality of the questions (clarity, relevance, etc.) and their timing and appropriateness given the flow of the activity. Research on the latter issues will require shifting from the individual question to the question sequence as the unit of analysis. (p. 363)

Specific Characteristics of Teacher Questioning Reported in Classroom-based Studies of Reading Instruction

In process-product research, reading, particularly, is a curricular area notable for high numbers of teacher questions during instruction. Teachers use questions to check students' comprehension of story content or evaluate the successful completion of practice exercises at a literal level of understanding by focusing on memory level thinking (Guszak, 1967; Wilen, 1984). This supports the combination of monitoring and assessment findings reported in classroom observation studies by Durkin (1978-79) and Duffy and McIntyre (1982). Teacher questions in the context of text-based lessons tend most often to assess student understanding of story content (Durkin, 1984; 1978-79; Roehler & Duffy, 1981).

In her observational study of reading comprehension instruction in fifth grade classrooms, Durkin (1978-79) observed that students spend large amounts of their instructional time answering questions that assess how well they have learned the informational content of stories. Durkin's results generated considerable debate within the reading research community because they imply that actual instruction does not occur very often. Her findings focused attention on the issue of whether assessment or assistance is more often the goal of teacher questioning during instructional episodes (Hodges, 1980; Heap, 1982).

Duffy and McIntyre (1982), documented the prevalence of assessment-oriented instruction in elementary reading lessons, concluding that teachers seemed to confuse instructional assistance with assessment. Duffy (1982a) argued that there is more to instruction than simply assessing, a position endorsed by other reading researchers (Good, 1983; Rosenshine, 1983; Tharp & Gallimore, 1983; Hodges, 1980).

What that "more" is continues to generate debate, however, particularly with regard to low group readers. For example, disagreements remain regarding whether teacher assistance is best provided by information convey through explicit explanation of reading strategies (Atwell & Rhodes, 1984; Duffy & Roehler, 1982b; Duffy & Roehler, et al., 1984; Holmes, 1983) or through use of "regulatory questioning" following story reading (Tharp & Gallimore, 1983).

Duffy, Roehler and their colleagues (Duffy & Roehler, et al., 1986b, 1986c; Roehler, Duffy & Meloth, 1986) argue that the most important instructional component in effective teacher talk, when teaching skills to poor readers, is explicit explanation, where the purposes and goals of skill instruction are met as strategies are presented through a presentation, modeling, interactive elaboration and guided practice/application. Roehler, Duffy and Meloth (1984) describe this as instruction with a "process-into-content" emphasis which

> . . . urges sharing with student (1) the knowledge of how the reading system works and (2) how they can consciously apply this knowledge in the strategic manner which distinguishes good readers from poor readers. (p. 6)

In this view, teacher questions are important, but as assessment devices of student instructional awareness of reading processes, as well as content, following the teacher's explicit explanation of the skill as strategy.

On the other hand, Tharp (1982) and others (Au, 1979; Hansen, 1981; Raphael & Gavelik, 1984) stress the implicit, yet pivotal, instructional role of "regulatory" questioning during text-based comprehension lessons, focusing on application of skill knowledge. According to this view, if students answer questions about the informational content of the lesson correctly, they demonstrate that they are, in fact, using reading skills strategically; therefore, reading instruction via questioning procedures has been successfully

provided. Because reading comprehension processes are implicit, questioning is the key instructional feature because it allows readers to express their process knowledge by correctly answering story-based questions. This view assumes that readers have the "how to" processes mentally in place and will learn when and how to efficiently use those processes at different cognitive levels by responding to teacher questions. Readers are not asked explain what they mentally did or thought to arrive at story-based answers. Roehler, Duffy and Meloth (1984) observed

> . . . the assumption seems to be that, if the <u>teacher</u> explicitly understands the reading process and asks questions about the content of text based on this understanding, <u>students</u> will "naturally" come to understand the system upon which the teacher based the questions.(p. 4)

They question the validity of this assumption for all children, especially low aptitude readers. In this Roehler & Duffy, et al., are supported by the work of Allington and others (Allington, 1983; Garner & Taylor, 1982; Good, 1981; Holmes, 1983; Paris & Myers, 1981; Shake & Allington, 1985).

For example, Paris and Myers' (1981) studies of the oral reading behaviors of good and poor fourth grade readers support the difficulties experienced by poor readers in acquiring comprehension monitoring strategies. Using a variety of observable measures for assessing students' comprehension monitoring (including interviews during and following reading, student ratings of the usefulness of reading strategies, and free recall following passage reading),

Paris & Myers documented the general lack of strategies, awareness and organized memory as characteristics of poor readers. They concluded by stressing the need to specify more clearly how teachers can provide students with appropriate training in monitoring strategies.

Carried to its logical outcome, Roehler, Duffy and Meloth (1984) argue that if low aptitude readers do not have the needed comprehension strategies in their heads, then it is rather difficult for "good" questions to "trigger in students an implicit understand of process." (p. 7) What is supposed to assist students in the acquisition of processual awareness, in reality, simply becomes assessment of what they don't know.

Furthermore, Shake and Allington (1985) question whether teachers use "good" questions even when provided with suggestions in teachers' materials. In their observational study of low group reading instruction, they found differential treatment of high and low reading groups through teachers' questioning. Teachers were more likely to use suggested questions with their high groups and "free-lance" instruction with their own questions with low groups. One explanation suggested for this finding was the basal text's relative lack of direction for skill instruction, a staple in the diet of low group instruction, compared to very specific suggestions provided for story-based discussions, often the focus of high group instruction.

These findings support the need to more closely examine teacher questioning practices during low group instructional interactions in skill lessons which typically serve as students' exposure to the processes of reading. According to Allington (1983), "good and poor readers differ in their reading ability as much because of differences in instruction as variations in individual learning styles or aptitudes." (p. 548)

Summary of Section 2: Questioning Effects and Student Outcomes

This section selectively reviewed process-product and classroom observational research and surfaced issues related to teacher questioning practices. Taken together, findings suggest that teachers are most effective when they pose high numbers of fact based questions with an academic focus in the form of guided practice. Classroom observational studies report that this appears to translate into a high degree of focus on teacher assessment of what students know. Further, teachers appear to apply questioning differentially to high and low group readers. These findings are important for this study because of its dual foci on teacher effectiveness and low group instruction.

In assessing the potential value of process-product findings for educators, Gall (1983) stated that it is premature to try to investigate the effects of teacher question types on student achievement. Rather than seeking causal relationships as has been common practice, he observed that

"It is first necessary to develop a better understanding of the processes involved in teacher-student questioning sequences." Further, he stresses that emphasis on acquisition of factual knowledge by means of questions is now well established and argues that it is time for researchers to move on to ". . . ask new questions about questions."

The findings summarized suggest that a number of changes in current practices used to study questioning may be in order. First, reporting the context in which patterns of teacher questioning behaviors occur is important for maintaining a realistic perspective on results. Second, conclusions about how questioning functions in lessons based solely on frequency counts of isolated questions have provided about as much information as they are likely to. Finally, means for coding questioning sequences need to be developed that allow researchers to view questioning as part of interactive lesson events. Descriptions of questioning's instructional roles requires consideration of how individual elicitations work together with other discourse elements (i.e., student responses and teacher evaluations).

SECTION 3:

Teacher Questioning, Comprehension Training and Student Cognitive Processing

This section examines teacher questioning practices related to comprehension training studies and student cognitive processing. This section begins with overview the

recently articulated "cognitive mediation paradigm" (Winne, 1985). Then findings from training studies are reviewed. Training studies focus on the strategic nature of reading comprehension processes and teaching students how to use cognitive skills independently during text-reading situations. Of particular interest for this study were investigators' descriptions of the questioning procedures used by teachers in interactions with students during the instructional phase of training.

Cognitive Mediation

The relationships between teacher questioning and development of student metacognitive strategies for understanding story content have also been explored (Fitzgerald, 1983; Raphael & Gavelik, 1984; Tharp & Gallimore, 1983; Sanacore, 1984). Research derives from recent theoretical work in the following areas:
(1) characterization of a schema-theoretic view of reading comprehension processes stressing the importance of the interactions between the reader's prior experiences, the text and the task of reading (for reviews, see Anderson & Pearson, 1984; Tierney and Cunningham, 1984);
(2) articulation of the kinds of cognitive knowledge (i.e., declarative, procedural and conditional knowledge) required to be able to read and comprehend strategically (Flavell, 1979; Paris, et al., 1983; Sanacore, 1984); and
(3) development of the cognitive mediational view of learning, emphasizing the interaction between the student

trying to make sense of instruction and the teacher's efforts to make instruction sensible (Winne, 1985). The work related to cognitive knowledge will be described in Chapter III because of its influence on the development of one of the coding schemes used to examine questioning in instructional sequences. The focus here is on the last area.

Research on cognitive mediation is viewed by many as the logical extension of the teacher effectiveness findings from process-product research (Doyle, 1983; Johnston, 1985; Winne, 1985). Developments in this area have redirected effectiveness research to factors related to students' cognitive processing during instruction. In reading, researchers focus on how students learn to monitor their use of cognitive processes and how that learning is facilitated through instruction.

Winne (1985) defined the cognitive mediational paradigm as follows:

> . . . during teaching, students engage in cognitive processing of the content they are to learn. Processes yield products. Therefore, teaching can be thought of as providing conditions that encourage students to apply one or another set of cognitive processes to content during instruction. Cognitive products are the results of this processing. When the cognitive products are congruent with objectives, I call them cognitive achievements. Cognitive achievements attained during lessons are building blocks for the achievements that are measured by tests, projects, and papers after instruction is over. (p. 674)

Thus, teachers' instructional practices, such as those involved in eliciting student responses to academic content, are mediated by student perceptions of and responses to classroom tasks (Doyle, 1983). In this respect, Winne (1985) noted that

> [T]he emphasis in the cognitive mediation view of teaching is not on teaching behaviors but rather on students' cognitive interactions with teaching. The ultimate measure of teaching is not whether teachers teach in a certain way, but whether students think about content in ways that can promote achievement. (pp. 673-74)

Clearly, however, the relationship between teaching events and learning events is not easily defined. While it is certainly important in effectiveness research to retain focus on the learner, it is far from established that researchers have learned all there is to know about effective teaching behaviors from process-product findings. It appears that there is room within the cognitive mediation approach to continue that clarification of teaching behaviors but as they affect and are affected by the reciprocal interactive relationships between teachers and students.

Teacher Questioning in Comprehension Training Studies

Research on questioning during reading instruction centers on teachers' use of questions in text-based comprehension lessons that focus on the application of skill knowledge to learning story content (Au, 1979; Carnine, Stevens, Clements & Kameenui, 1983; Guszak, 1967; Hansen, 1981; Mangano, Palmer & Goetz, 1982; Palincsar, 1984; Pearson,

1984; Raphael, 1982; Raphael & Gavelek, 1984; Tharp, 1982; Tharp & Gallimore, 1983). Numerous studies have been conducted both with researchers serving in the role of teacher or with classroom teachers receiving instruction in how to teach students self-monitoring strategies. The goal in this kind of study is to teach students how to monitor their use of cognitive processes during reading comprehension. Findings in this area suggest a relationship between reading comprehension and questions requiring both lower order and higher order thinking skills. Teachers who explicitly model questions and question-answering strategies, employing higher levels of thinking, appear to be more effective in producing reading achievement (Au, 1979; Palincsar, 1984; for a review, see Paris, Wixson & Palincsar, 1986).

Overall, despite increased interest in how teacher questions assist in the development of students' cognitive skills for monitoring reading comprehension, the results of studies of how students are taught to monitor their understanding of reading processes have yet to reflect attention to the reciprocal aspects of teaching and learning. Most research continues to focus primarily on reporting student achievement outcomes. While training studies report gains in student comprehension achievement, they have been slow to clarify the nature of the teacher's role in bringing about improvement beyond providing an explanation of the procedures students should use when monitoring comprehension of

text. More specifically, training studies have not significantly increased understanding of how teachers in naturalistic classroom settings can vary their questioning behaviors between the aims of assessment of cognitive outcomes versus instructional assistance, or how teachers' questioning behaviors can affect students' developing metacognitive awareness of reading as a strategic process.

Wong (1985) in a recent review of self-questioning training studies noted that one problem for researchers in this area has consistently been lack of attention to adequate monitoring of how teachers implemented the required instructional procedures which were successful in promoting student comprehension growth (cf., the self-questioning training studies conducted by Brown, Campione & Day, 1981; Hansen, 1981; Hansen & Pearson, 1983; Palincsar, 1984; Palincsar & Brown, 1982; Raphael, 1982; and Raphael & Wonnacott, 1985; see Brown, 1980, for a review). In other words, it is unclear how teachers actually structured their interactions with students during the reported guided practice sessions following the presentation of the procedures for self-questioning.

In her discussion of the successful results of teaching students how to use "Qustion-Answer Relationships" (QARs) during text reading, Raphael (1982) expressed some concern about the importance of establishing the ability of actual classroom teachers to successfully implement complex comprehension monitoring strategies with students without

extensive researcher involvement. In this case, Raphael noted that teachers who were successful at implementation made it a point to elicit student justification of and the reasoning behind how they obtain correct answers to passage-based comprehension questions.

Duffy, Roehler & Mason (1984) criticized the focus of instruction in comprehension training studies because it typically centers on explicit treatment of the content of the sample passages used during practice, rather than on explicit discussion of the actual cognitive processes being used to comprehend. In this sense, teachers are trained to conduct lessons that assume students' implicit understanding of how they were performing the self-questioning strategies.

Summary of Section 3: Teacher Questioning, Comprehension Training and Student Cognitive Processing

This section overviewed the cognitive mediational view relating instruction to student cognitive processing and reviewed the role of teacher questioning practices in comprehension training studies. This area is important for this study because it illustrates recent directions in research focused on student strategic learning. Notably, these studies used the text-based comprehension lesson as the setting for research. An important finding for teacher questioning is that teacher questions provide important models for students to use in developing ways to self-question. The evidence for this, however, is limited to

text-based lessons. Also, researchers in this area provide little information about how teachers actually conduct self-questioning instruction.

SECTION 4:

The Sociolinguistic View of Questioning Practices

While process-product researchers' contribution to research on classroom instruction is noteworthy for the number of effective teaching practices identified, it is also important to qualitatively describe those characteristics as they occur in particular classroom contexts for specific kinds of instructional episodes. This "fleshing out" process has largely been assumed by researchers in the qualitative tradition--e.g., classroom ethnographers, sociolinguists, cultural psychologists and anthropologists. Doyle (1977) observed that

> teacher effectiveness formulations should include both contextual variables and the meanings teachers and students assign to the events and processes that occur in classrooms...[t]he teacher effectiveness question itself might best be changed from "Which instructional conditions are most effective?" to "How do instructional effects occur?" (p. 188)

For this reason, this section considers the influences of studies grounded in sociolinguistics and the ethnography of communication that have addressed the role of questioning practices in classroom interaction sequences. Findings that have contributed to a characterization of instructional discourse are discussed. Also, an overview of major qualitative findings related to reading instruction is provided.

This area is promising as a means of providing the in-depth perspective needed to understand how teacher questioning is shaped by the interactional, as well as academic, context of reading instruction. Many of the techniques used for transcript analysis in this study were adapted from current research in this area and will be described in Chapter III as they influenced the design of data collection and analysis.

Recent advocacy of sequences as more appropriate for analyzing questioning (cf., Bloome & Argumedo, 1985; Cazden, 1986; Heap, 1980, 1982; Mehan, 1974, 1979a, 1979b) raises the question: Why have studies isolating and focusing on the individual teacher question as a researchable event proved so problematic in providing educators with useful information for improving the quality of classroom questioning? This question is best answered by appealing to the growing literature from sociolinguistics and ethnography which has examined classrooms as communicative or interactional systems jointly constructed by the teacher and students (Mehan, 1974, 1979a). In this respect, sociolinguistic views hold promise for helping researchers bridge the gap between current process-product research and future research focused on cognitive mediation.

Researchers with a sociolinguistic perspective view reading "as a cognitive, intrapersonal process embedded in a social and linguistic process and as an interpersonal social/linguistic process" (Bloome & Green, 1984). This

perspective requires that reading be examined as dependent upon the context in which it occurs, in terms of both instruction and performance.

Sociolinguists and ethnographers study interaction sequences in classroom discourse in order to better understand (among other things) how participants roles are structurally defined and characterized in the unfolding flow of classroom discourse events; how classroom discourse relates to student learning; and how lesson events are structured through the interaction of components such as teacher questioning, explanations, feedback, as well as student responses to teacher behaviors and student peer interactions (cf., Au, 1979; Au & Mason, 1981; Bean, 1985; Bloome, 1984; Bloome & Argumedo, 1985; Cazden, 1981. Cazden, John & Hymes, 1972; Erickson, 1982; Farrar, 1983, 1984; Green & Wallat, 1981; Gumperz, 1981; Mehan, 1978; 1979a, 1979b; 1982; 1984; Shultz, Erickson & Florio, 1982; Wallat & Green, 1979). Many researchers see reading instruction as prime territory in which to investigate participant roles and structures that are relatively recurrent over time (see Bloome & Green, 1984, for a review of studies focused on the sociolinguistic study of reading). According to Cazden (1986),

> Most attention has been given to teacher questions because of their frequency, the pedagogical work they are intended to do, and the obvious control they exert of the talk and thereby over the enacted curriculum. (p. 440)

Characteristics of Instructional Discourse

Qualitative researchers have established that when discourse events occur in school, they take on unique properties that set them apart from conversational interactions in other settings (Au, 1979; Au & Mason, 1983; Shultz, Erickson & Florio, 1982; Mehan, 1979b, 1984). A key characteristic of instructional discourse is the relatively unequal status of the participants (Shultz, Erickson & Florio, 1982) compared to the more equal status of informal interactions. Typically, the teacher's work is initiating, focusing and terminating interactions--in other words, controlling. Students' work is responding when called upon to do so. Teachers most often exercise control in interactions through prodigious use of elicitations to which students must usually respond with some demonstration of learned academic knowledge or acquired skill (Hyman, 1979; Dillon, 1981a). In other words, teachers use questioning in ways which encourage students to put their thinking on public display. This represents a basic level of the "performance-grade exchange" concept articulated by Doyle in his descriptions of task structures (Becker, Geer & Hughes in Doyle, 1977, 1979). The extent to which students control aspects of interactions probably lies in the perceived acceptability of their responses to the teacher.

A second distinguishing feature occurs in the teacher's response to a student's response--public evaluation of correctness (Stallings, 1975; Mehan, 1979a). The evaluative

component is particularly important because of another recently articulated characteristic of teacher-student interactions distinct from naturally-occurring conversations--the knowledge state of the questioner (Lehnert, 1978). Typically, instructional interactions tend to center around revealing information that is known in advance by the teacher (Mehan, 1979b). Thus, when the "correct" student response to a teacher elicitation occurs, the teacher duly certifies the event and initiates another interactive sequence. Instructional interactions seem guided by the principle: "Tell me what you know I know and your turn will be over. And by the way, you'll keep the lesson running smoothly." As for the student, successful negotiation of instructional interactions depends on knowing how this principle operates (Au & Mason, 1981, 1983); in other words, students must become sensitive to the teacher's intent (Guszak, 1967; Mehan, 1979b; Wixson, 1983b) and this intent is most frequently communicated through the manner in which teachers elicit responses about the topical content of the lesson from students.

Major findings from Sociolinguistic Studies of Reading Instruction

The contributions of sociolinguistic and classroom communication research to influencing directions currently being pursued in reading research are many. According to Bloome and Green (1984), among the findings related to understanding the role of teacher discourse in lesson

interactions are the following:

(1) the ways in which teachers structure the interpersonal context influences student performance within the lesson and on related tasks and outcome measures;

(2) the ways in which students use language in their interactions with teachers within lessons influences teacher evaluation of their reading performance;

(3) differences in the nature of reading, in the ways in which reading is structured, and in expectations for reading performance and participation exist for high and low group students; and

(4) the interpersonal context of reading mediates the reading-learning process. (p. 415)

Summary of Section 4: The Sociolinguistic View of Questioning Practices

This section surveyed the qualitative research contributions of sociolinguitics and classroom ethnography toward gaining better understanding of the interactional context of instruction. Findings in this area are contributing depth to instructional effectiveness research in terms of characterizing the functions of teacher and student discourse in the social context of the classroom. Some of these findings were presented. Reviewing studies in this area was important for the conceptualization and particularly for the methodology of this study. The work of Mehan (1979a) and others supports the broader definition of questioning adopted here. Also, the development of the methodology for analyzing lesson transcripts directly derives from techniques

developed by a number of researchers who are also grappling with making sense of classroom discourse--notably, Au, Bean, Erickson, Green, Heap, and Mehan.

SECTION 5:

Issues in Classroom Questioning Research

The same research base that provides confirmation of many intuitively known ideas about teacher questioning in classrooms has also raised a number of not easily resolvable issues. These issues relate to how questioning practices should be studied and what the focus of those investigations should now be to make productive contributions to improving classroom instruction. In this section several issues that directly bear on how this study was conceived, designed and executed will be discussed. They are as follows: (a) the centrality of the instructional context, the lack of attention to which has contributed to the superficiality and hence, noninstructiveness of many previous studies of questioning practices; (b) redefining the unit of analysis for studying questioning practices--the question versus sequence debate; and (c) clarifying instructional assessment and assistance roles by identifying meaningful instructional purpose categories for teacher questioning practices.

Specifying the Instructional Context

Findings from both questioning and reading instruction research support the need for a closer examination of the functional role of teacher questioning practices in more

precisely defined instructional contexts. At a theoretical level, Brophy (1979) and Gall (1983) advocate considering teacher questions in the instructional context in which they occur. The influence of event contextuality on questioning is often overlooked as it affects what is being asked and how. Event contextuality can be viewed from several angles, three of which are important here: the context provided by the instructional task; the context created by the participants in an interaction; and the context provided by the aptitude of the learners receiving instruction.

Instructional Task Context

First, at the global instructional level, the subject matter context in which questioning is investigated is important. Closely aligned with this is the importance of the instructional task settings within a subject matter area which represent different ways of learning about content. For reading-related questioning research, this means that conclusions drawn about effective questioning in reading instruction should derive from studies using reading instruction as the context of investigation. Rosenshine and Stevens (1984) recently concluded that it is doubtful that there is any such thing as broadly generalizable questioning practices across subject matter areas and perhaps even grade levels.

Within reading are several specialized instructional task areas used to teach the subject matter of reading, e.g., story-based comprehension lessons, skill lessons,

vocabulary lessons, uninterrupted silent reading lessons, and content area reading lessons. Researchers are beginning to acknowledge that in the reality of classroom practice, each of these types of lessons do occur and that each has unique instructional requirements. This means that instructional variables, such as teacher questioning practices, need to be examined within each area to confirm many of the generic findings researchers offer about reading instruction (Mangano, in press).

Interactional Context

Second, as sociolinguists and ethnographers point out, the interactional context is just as important as the physical context of instruction (Green & Smith, 1983). Teacher elicitations are linked to preceding and following topical and social contexts in the larger interactional event of the school day. In classroom discourse student responses must often reflect an understanding of an elicitation's social history, as well as the knowledge required to produce an acceptable content answer (Farrar, 1983). Events have certain holistic characteristics that remain hidden when particular conversational elements are examined out of the context of the "discourse event".

For example, Interaction Analysis coding systems (see, for example, Brophy & Good, 1972; Durkin, 1978-79; Flanders, 1970), used to tally or time the occurrence of classroom events as they occur, have been criticized for ignoring contextual effects on particular kinds of verbal discourse

events (Mehan, 1979a; Heap, 1982). Heap (1982) sees three problems with this research method that directly bear on the issue of event contextuality. These are as follows: (1) because categories are mutually exclusive, only one function can be assigned per event; (2) because such systems are designed to focus on frequency of events, the positioning of those events in the actual sequential organization of verbal discourse in the instructional episode is not considered; and (3) "no function is conceived of, or accounted for which operates across and through a sequence of events" (p. 394). He observed that these problems

> . . . systematically prevent the discovery of sequences of discourse having functions borne along by events having multiple functions. Concretely, Interaction Analysis has no way of paying attention to the form and function of question-answer-comment sequences which are so noticeable in classrooms. (p. 394)

Learner Aptitude Context

Learner characteristics are important factors influencing the context in which instruction occurs. Several studies note the differences in instruction provided to low versus high group readers, for example. Among differences reported are those involving the kinds of questioning practices teachers employ with readers of various aptitude levels. As noted earlier, low group readers are typically given a diet of literal level, factual recall questions while better readers receive questions designed to encourage the use of higher level thinking skills (Good, 1981; Holmes, 1983; Shake & Allington, 1985).

Redefining the Unit of Analysis for Studying Questioning Practices

Contrary to practices in many instructional studies, questions should not be viewed as isolated verbal events. Rather, they are an integral part of interactional sequences that are concomitant with other verbal discourse events. In classroom discourse this would include other functional utterances such as informational and evaluative statements (Mehan, 1979b). According to Hyman (1974, 1979), questions are best thought of as elicitations of verbal responses which assume their identity based on the nature of responses they produce in a particular context. In other words, a question should be defined on the basis of its response (Lehnert, 1978). In this view, grammatical form is usually irrelevant because the question's intent to activate particular types of thinking is most important. Mehan (1979a) sees several problems in studying questions strictly in terms of their grammatical structure. He described the problem as follows:

> Lessons have often been characterized as sequences of questions and answers, questions asked by the teacher, answers provided by the students (Brophy and Good, 1974; Dunkin and Biddle, 1974; Mehan, 1974a; Mishler, 1975a, 1975b). A questions, in turn, is generally thought of as containing a wh- word (what, which, who, when), having subject-verb order reversed, and being spoken with rising intonation at the end of the sentence.
>
> The definition of items on grammatical has been helpful in analyzing sentences (Chomsky, 1965). However, this practice is not heuristic in the study of interactional events because

> the function of an utterance is not isomorphic with the form it takes in naturally occurring discourse (Gumperz and Hymes, 1964) . . . [t]he meaning of instructional acts in this classroom was not conveyed by their grammatical form alone. The teacher received "answers" when she had not asked what would conventionally be called questions. For example, on many occasions the teacher began a sentence and paused, and the students completed her sentence, thereby producing an "answer."
>
> The implicit meaning of these utterances was not conveyed by their overt form . . . From the point of view of the functions of language in the classroom (Cazden, John, and Hymes, 1972), the teacher elicits information from students; she does not ask them questions. These observations reinforce the view that the study of language in naturally occurring situations requires the use of functional rather than grammatical concepts. (pp. 41-43)

Thus, asking new questions about questions requires consideration of just what, exactly, constitutes a "question" during an instructional episode.

Sequences

Many researchers (e.g., Brophy, 1979; Gall, 1970; 1972; 1983; Heap, 1982; Hyman, 1974; Mehan, 1979a, 1982; Sinclair & Coulthard, 1975; Gumperz & Herasimchuk, 1972) advocate refocusing research on sequences of teacher-student verbal discourse, not just on question frequency, to examine the quality of questioning behaviors. The analysis of questioning practices by isolating teacher elicitations from the context of teacher-student interactions is ultimately uninformative for altering classroom questioning practices (Bloome & Argumedo, 1985). Regarding sequences, Brophy argued that attention should be paid to "the logical or

theoretical qualities" of interactions and whether or not questioning sequences were successful in meeting their stated objectives. He stated, ". . . teachers do not plan to ask so many [some specified number] questions per hour, they plan to ask sequences of questions designed to elicit particular facts or conclusions." (p. 744)

Instruction as Assessment versus Assistance

The issue of instruction as assistance versus assessment was mentioned earlier in this chapter. It is particularly important for clarifying the appropriate role of teacher questioning in reading skill instruction. Text-based application lessons, often viewed exclusively as the context of reading instruction, are only a part of the varied repertoire of reading lessons provided in the elementary classroom. Another prevalent kind of instructional episode is the so-called skill lesson, where particular reading skills are taught for later use, ideally, in real text reading situations. Numerous taxonomies of skills have been developed and incorporated into elementary reading programs (Note 3). Skill lesson focus on particular process factors associated with reading as opposed to story content or information acquisition factors (Roehler, Duffy & Meloth, 1983; Duffy & Roehler, et al., 1984).

A major criticism of skill instruction, when skills are singled out for direct teaching, is that the skill becomes the end rather than the means of learning to read (Note 4). Duffy (1982b) noted that effective reading skill instruction

is generally lacking in explicit assistance from teacher to students in how to perform and apply the strategic reading behaviors needed to selectively use skills when problems are encountered during reading. Instead, skill instruction often consist of set routines for eliciting product-oriented responses about letter-sounds, words, sentences or even story content based on interrogation (Durkin, 1978-79) and student recitation (Duffy & McIntyre, 1982). Also, it provides frequent directives for independent student seatwork activities in practice materials (Anderson, 1981a, 1981b). With the heavy reliance in elementary reading on workbook activities, Anderson (1981b) observed that the classroom orientation becomes one of "content coverage" rather than "content mastery".

The shortcomings of reading instruction documented by classroom researchers suggest that one way to better understand what constitutes reading skill instruction is by careful examination of what teachers actually communicate about skills during instructional episodes: that is, how they elicit student responses focused on skill use and elaborate upon those responses. An important question is, how do teachers use elicitations in instructional interactions when the intent for students is meaningful skill learning? Thus, this study of questioning-response-feedback sequences during reading skill instruction is relevant, particularly as it can contribute toward a better understanding of how teacher

questioning behaviors may assist, as well as assess, student learning.

Summary of Chapter II

This chapter reviewed four areas of research that support the need for this study of teacher questioning practices during reading skill lessons. These included the following: (1) classifications systems or taxonomies developed for types of teacher-posed questions; (2) process-product and classroom observational research related to identifying effective teacher questioning practices; (3) the potential mediational role for teacher questioning practices identified in comprehension training studies; and (4) qualitative approaches to examining questioning within the interactional context of instruction.

Overall, the literature on questioning resembles a "patchwork" rather than a unified body of findings (Raphael & Gavelek, 1984). Not only are topics diverse, but findings often conflict (cf., Redfield & Rousseau, 1981; Winne, 1979). This is because of the complexity of classroom questioning itself. It pervades all aspects of the school day, but is extremely sensitive to immediate context effects.

In general, the number of studies available that addressed aspects of instructional questioning in reading were numerous. There were, however, few that used skill instruction for contextual focus. Studies typically examined teacher questioning as it occurs in text-based

comprehension lessons. Taxonomies developed to study teacher questioning reflected researchers' interests in clarifying the instructional effects of questions of varying complexity on student responses. Findings from several perspectives confirm teachers' high use of factual, assessment-focused questions during reading lessons. This appears particularly prevalent during low group instruction. There was disagreement, however, as to whether these lower level questions, when compared with higher level questions, are more effective in promoting positive student learning outcomes. At present the focus of questioning research in reading is shifting more toward understanding the cognitive mediational role of teachers' questioning practices and how questioning functions in developing reader self-sufficiency in the use of comprehension strategies. The most pressing need at present, however, is to add depth to the array of findings that has been generated. In this regard, qualitative studies of classroom interactions provide much needed insight.

Gall's call in 1983 to ask new questions about questions had two requirements, both of which are accounted for in this dissertation: a specific instructional context in which to study teacher questioning behaviors--in this case, the reading skill lesson, particularly for low reading groups; and use of a broadened definition of what constitutes classroom questioning--for this study, the teacher elicitation-student response-teacher evaluation sequence.

This review demonstrated that many interrelated factors affect teachers' questioning practices. The most realistic approach is to account for as many of these factors as possible when describing the instructional setting, couch findings in those terms, and resist pressures to be too broadly prescriptive. Eventually there should be an integrative effect across studies that will enable researchers to describe effective questioning patterns to practitioners in terms that will be more helpful than at present for improving instructional quality.

NOTES

1. Sanders (1966) observed that all categories are named after mental processes except for the lowest level (knowledge). The reason he renamed "knowledge" as "memory" was to rectify the non-parallelism and better describe the type of processing that occurs. Also, Sanders expanded Bloom's (Bloom, et al., 1956) category, "comprehension," to include translation and interpretation because they "offer opportunities for distinct kinds of thinking." (Sanders, 1966, p. 2-3)

2. Guszak (1983) subsequently explained that at the time he developed his taxonomy, Barrett (1976) had not yet done his. He notes that both he and Barrett used the work of Bloom (Bloom, et al., 1956) and Sanders' modifications of Bloom. The major problem with Sanders' work, however, was that his structure was not readily useful to others who tried to use it on specific tasks such as analyzing the outcomes of textual reading (Guszak, 1983).

3. There are as many taxonomies or hierarchies of reading skills in elementary reading programs as there are reading programs. Basal textbook series include skill scope and sequence charts that reflect a program's views toward skills. Although content and sequence across hierarchies may differ, there is general agreement on broad categories of skills. These usually include word recognition and structural analysis skills (also called phonics or decoding skills); comprehension skills; and study or information gathering skills.

   The specification and validation of skill hierarchies are important issues. Bourque (1980) summarized three validation methods typically used: (1) a priori, ordering based on reading theory or expert opinion and subsequent practitioner verification; (2) empirical, using psychometric data generated from test item-sets; and (3) experimental, designing instructional item-sets; and (4) experimental, designing instructional units based on a priori ordering and then pre/post testing students for hierarchical skill acquisition.

4. Perhaps the most widely known instructional program developed to assist low group teachers with skill instruction is DISTAR which actually scripts informational statements and questions for teachers (Becker, 1977; Becker & Gersten, 1982; Engelmann & Carnine, 1982). DISTAR represents one extreme of reading programs that focuses mostly on discrete skills to ensure large amounts of repeated practice. This program was designed to conform to instructional effectiveness findings from process-product research.

CHAPTER III

DESIGN AND PROCEDURES

This study was designed to better understand the functional role of teacher questioning behaviors during reading skill instruction. The research investigated whether teachers who were more or less effective in promoting student growth in reading used questioning differently. Lesson interaction sequences were analyzed according to the following: (1) individual elicitation functional content; (2) structural form; (3) overall topical information content; (4) cognitive knowledge type focus; and (5) the perceived instructional purposes of participants' interactions. Additionally, teacher evaluation responses within interaction sequences were individually analyzed for information content focus and syntactic form.

The methodology used was descriptive. Qualitative and quantitative procedures were combined to analyze teacher discourse in lesson transcripts. Teacher questioning patterns were characterized and described in terms of the frequency of discourse elements in interaction sequences in the overall readings skill lesson and relative to their positioning within the lesson structure.

This chapter presents the methodology used to answer the research questions. First, the procedures used to obtain a teacher sample based on instructional

effectiveness criteria are described. Second, the qualitatively-oriented data collection techniques used to prepare lesson transcripts and to identify instructional interaction sequences and component discourse elements are detailed. Third, the data analysis procedures used to answer each of the major questions are discussed.

Procedures to Obtain a Teacher Sample

This section deals with three issues regarding selection of a teacher sample. First, the study from which the teachers were selected is described. Second, the procedure used to select the twelve more effective and less effective teachers from the original study's sample of twenty-two teachers are reported. Third, the characteristics of the teachers and for the lessons they taught are specified.

The Study from which the Sample was Selected: The Teacher Explanation Study

The teachers in this study were chosen post hoc from among the classrooms included in the Teacher Explanation Project (Duffy & Roehler, et al., 1986c), at Michigan State University's Institute for Research on Teaching during the 1982-83 academic year. Twenty-two fifth grade teachers of low reading groups volunteered to participate in a classroom-based, experimental intervention study of teacher explanation during reading instruction.

All teachers were employed by a large, midwest, urban school district. They were assigned by their respective

school administrators to teach fifth grade low readers. Research was designed to determine whether teacher effectiveness in reading skill instruction, defined by student awareness following instructional presentations and student achievement on a standardized reading achievement test, was a product of the explicitness of teachers' instructional explanations (Duffy & Roehler, et al., 1984; Duffy, Roehler, Book, Meloth & Vavrus, 1986a; Duffy & Roehler, et al., 1986c; Roehler & Duffy, et al., 1984).

Teachers in the parent study were randomly assigned to either a treatment or control group following stratification of the entire sample according to classroom management ratings obtained during baseline observations of teachers' reading skill instruction. The management assessment was important as an entry variable to ensure equality of the two groups in terms of ability to engage students in academic tasks. Teachers were identified as high, average or low managers. The use of these designations was relative owing to the fact that no teacher was identified as a poor manager. An overall management rating for grouping purposes was derived from ratings in three areas: (a) the number of students in the reading group on task at 3- to 5-minute intervals (engagement rate); (b) the teacher's verbal and non-verbal management behaviors; and (c) the number of interruptions to activity flow. Additionally, each observer made an overall subjective assessment of the observed teacher's management. Management was monitored for each

teacher at four of the five lesson observations throughout the school year.

The eleven Treatment teachers received training from Project researchers during the academic year in how to incorporate explicit explanations into presentations in their skill lessons. There were three instructional components emphasized in explicit explanation training: (1) how to present traditional reading skills as mental processing strategies useful for repairing blockages to meaning; (2) how to design explicit statements reflecting the strategic nature of reading skill use--the skill process being learned, how to apply it, and when it would be useful when reading; and (3) how to organize these explicit statements into a lesson presentation. The eleven control teachers received no training beyond a presentation at the beginning of the study on effective classroom management techniques based on Anderson, Evertson & Brophy's First Grade Study (1979).

The reading skill lessons of both Treatment and Control teachers were observed five times at evenly spaced intervals throughout the school year. Each lesson was audiotaped and subsequently transcribed to create an easily accessible record of verbal teacher-student discourse during the lesson. Additional data collected for each teacher included field notes of lesson events recorded by researchers trained as non-participant observers; audiotaped interviews with low group students following each of the final four observed

lessons about what they learned from the lesson; pre/post test measures of student achievement (using the Gates-MacGinitie Reading Achievement Tests, Second Edition) to record reading growth; and audiotaped interviews with each teacher focused on their skill instruction.

Procedures Used to Select the Sample

The twelve teachers used in this study were selected from the original teacher pool of twenty-two following completion of the parent study. The six most effective and the six least effective teachers were identified. Instructional effectiveness criteria for selection were based on two kinds of student performance (see definition in Chapter One).

The twelve teachers were selected on the basis of an overall rank score obtained for each teacher based on students' ranked outcomes in two categories: (1) a process measure--rated verbal reports of students' awareness following skill instruction; and (2) a product measure--standardized reading achievement test scores measuring student growth in reading during the school year. Teachers' average student awareness ratings and achievement test scores were converted to z-scores and ranked separately. All twenty-two teachers were ranked from highest to lowest in each category. The two rank positions obtained by each teacher were then averaged to create an overall rank, called their "effectiveness ranking". The top six ranked teachers were considered more effective and the bottom six were

considered less effective. The results of the ranking are presented in Table 3.1. An asterisk (*) identifies the teachers selected for this study's sample of twelve.

The ranking differences were considered attributable to differences in the teachers' instruction, not differences in the student groups for the following reasons. First, although most of the teachers taught in different schools within the district, a district-wide busing policy equalized the demographic characteristics of the student populations across schools. Second, grouping decisions for reading instruction were made at the building level based on the district's practice of grouping students homogeneously. Student assignment to reading groups were made at the beginning of the school year based on Stanford Achievement Test scores from the previous year and the recommendations of previous teachers. Students were placed in the low groups if they scored more than one year below grade level in reading achievement.

Sample Characteristics

The characteristics of the sample are detailed in this section. First, the characteristics of the teachers and their reading groups are described. Second, the characteristics of the lessons they taught are provided.

Teachers

The characteristics of the two teacher groups were relatively balanced following ranking by the selection

Table 3.1

An Overall Teacher Effectiveness Ranking Based on Rankings of Z-Scores Converted from Two Student Performance Scores: Achievement and Awareness
(n = 22)

	Teacher@	Overall Rank	2-Rank Average	Rank 1 (z) Student Achievement	Rank 2 (z) Student Awareness
*	18 (T)	1	3.0	3 (1.418)	3 (1.145)
*	01 (T)	2	4.5	8 (.306)	1 (1.973)
*	19 (T)	3	5.0	2 (1.614)	8 (.491)
*	04 (C)	5	7.5	5 (1.135)	10 (.318)
*	14 (T)	5	7.5	10 (.095)	5 (.725)
*	22 (T)	5	7.5	11 (- .016)	4 (.845)
	13 (C)	7	8.0	7 (.346)	9 (.339)
	16 (C)	8.5	8.5	1 (1.735)	16 (- .716)
	06 (C)	8.5	8.5	6 (.735)	11 (.092)
	10 (T)	10	10.0	13 (- .412)	7 (.544)
	05 (T)	11	10.5	19 (-1.066)	2 (1.822)
	03 (T)	12	11.5	17 (- .699)	6 (.707)
	09 (C)	13.5	13.0	4 (1.318)	22 (-1.889)
	12 (T)	13.5	13.0	14 (- .432)	12 (- .016)
	23 (T)	15	14.5	9 (.234)	20 (-1.161)
*	11 (C)	17	15.5	16 (- .614)	15 (- .570)
*	02 (C)	17	15.5	18 (- .830)	13 (- .359)
*	21 (C)	17	15.5	12 (- .189)	19 (- .904)
#	15 (C)	19	16	15 (- .466)	17 (- .737)
*	07 (C)	20	17	20 (-1.072)	14 (- .528)
*	08 (T)	21	19.5	21 (-1.289)	18 (- .748)
*	20 (C)	22	21.5	22 (-1.850)	21 (-1.375)

@ Teachers' group membership in Teacher Explanation Study indicated as follows: (T) = Treatment; (C) = Control.

Teacher 15 was not included in the sample of less effective teachers because only two of her five lessons were comparable in skill topic to the lessons taught as skill lessons by the other twelve teachers. The cut-off of lessons per teacher needed for transcript analysis to reflect overall instruction was set at three.

criteria. The twelve teachers taught in nine schools in the urban district. There were five different schools represented in each group. Each group contained a pair of teachers who taught in the same building. In terms of classroom management, the variable of interest for this study was the student engagement rating. Table 3.2 shows the student task engagement ratings obtained by the twelve teachers at the beginning and ending points in the observation cycle.

Table 3.2

Student Engagement Ratings at Four Observation Points During the Academic Year for the Six More Effective and Six Less Effective Teachers

Teacher No.	Lesson Observations* 1	2	3	5
More effective teachers				
18	1	1	1	1
01	1	1	1	1
19	2	1	1	1
04	1	1	1	2
14	1	1	1	1
22	1	1	1	1
Less effective teachers				
11	3	2	1	1
02	2	1	1	1
21	2	1	1	1
07	2	2	1	1
08	3	3	NA	1
20	1	3	3	3

*Management ratings were not obtained for the fourth observation.

Although the teachers ranked as more effective began the year with higher student engagement ratings than those in the less effective group, the ratings of both groups at the

end of the year were similar (with the exceptions of Teacher 04's average rating in the more effective group and Teacher 20's low rating in the less effective group).

Table 3.3 describes the reading group characteristics of the six more effective and six less effective teachers. As can be seen, the overall make-up of both groups was similar. All teachers taught one of the low reading groups in the fifth grade at their respective schools. Reading group sizes ranged from 4 to 22 students. The average group size for the more effective group was 11.5; for the less effective group, 13.17. Decisions about which basal textbook series would be used were made at the building level, as were decisions about how students would be grouped with various teachers (i.e., self-contained with homogeneous small groups versus assigning teachers to teach particular ability groups grade-wide, called the "Joplin plan"). The Gates-MacGinitie pre-test scores for the twelve teachers indicated that the entering reading ability levels of the reading groups taught by teachers in the two effectiveness groups were roughly matched, although students of the more effective teachers scored slightly lower.

Lessons

The reading lessons of interest were those in which instruction in reading skills was provided to low group readers. The fifty-one analyzed lessons had been identified as "skill lessons" by each teacher (See definition in Chapter One).

Table 3.3

Descriptive Characteristics of Reading Groups

Tchr	Group Size	How Grouped	Basal Text Publisher	Gr. Level of Texts Used	Pre-Test: Mean score	G.E.
More Effective Teacher Group:						
18	12	Joplin	Ginn	3-4	27.25	3.6
01	21	Joplin	Ginn	5	45.76	4.7
19	11	Joplin	Ginn	3-4	25.73	2.8
04	5	Self-Contained	Houghton-Mifflin	2-3	25.20	2.7
14	12	Joplin	Houghton-Mifflin	3-4	38.00	3.9
22	8	Joplin	Ginn	3-4	24.38	2.6
Less Effective Teacher Group:						
11	22	Joplin	Harcourt-Brace	3-4	30.14	3.3
02	13	Joplin	Houghton-Mifflin	4-5	37.46	3.8
21	13	Joplin	Harcourt-Brace	4-5	46.85	4.8
07	12	Joplin	Houghton-Mifflin	3	24.67	2.7
08	15	Joplin	Houghton-Mifflin	4	40.87	4.2
20	4	Self-Contained	Ginn	4	41.75	4.3

The teachers selected the skill topics, usually based on the scope and sequence suggestions of the basal text program in use. The number of topics covered in a given skill lesson ranged from one to three or four. For lessons covering multiple topics, the one or two topics receiving instructional emphasis by the teacher were analyzed. If a lesson covered two topics, and both were included in the transcript analysis, then both topics are listed separately

in the appropriate category. Lessons excluded from analysis were those not considered skill lessons as defined for this study.

An attempt was made to adhere within the sample to lesson topic similarity on the basis of four reading skill areas from which skill lessons are typically identified by basal text publishers. Including a category for multiple topic coverage, the five topical content categories for grouping lessons were the following:

(1) Word Recognition: Decoding skills;

(2) Word Recognition: Meaning skills;

(3) Text Comprehension skills;

(4) Study Skills; and

(5) Multiple skill tasks from workbooks.

The number of lessons analyzed per teacher ranged from three to five of the five lessons observed during the parent study. Seven lessons were omitted because of failure to meet topical criteria. Two lessons were unavailable for transcript analysis due to audio-tape equipment malfunction during the observations. The total number of lessons analyzed was fifty-one of sixty observed during the school year--25 more effective teacher lessons and 26 less effective teacher lessons.

The topical characteristics of analyzed lessons for the more effective and less effective teacher groups are shown below. For each teacher, the number of lessons analyzed, the skill topics taught, and the categorical designations

are presented in Table 3.4. A categorical summary of lesson topics follows individual teacher information.

Summary of Sample Characteristics

The sample had two kinds of characteristics which were described in this section. First, the six more effective and six less effective teachers were of similar background regarding characteristics of their reading groups and instructional setting. Second, the lessons which they taught were considered skill lessons and based on topics selected by the teachers as part of their regular instructional program.

Summary of Procedures to Obtain a Teacher Sample

This section described how the sample was obtained for the study. After providing background which described how this study was related to the Teacher Explanation Study through the teachers included for study, the procedures used to select from the parent study's sample were detailed. Finally, the teacher groups and lessons analyzed were characterized.

Data Collection Procedures

The data base for the descriptive analysis of teacher questioning behaviors consisted of the audiotapes and typed transcripts of taped classroom discourse of the fifty-one observed reading skill lessons taught by the twelve teachers. This section describes procedures used to prepare the transcript data for analysis.

Table 3.4

Reading Skill Lesson Topics

A. More Effective Teacher Group:

Teacher	Lessons Analyzed	Lesson Number and Skill Topic	Skill Category
18	4		
		1--Omitted	
		2--Synonyms and Antonyms	2
		3--The /f/ sound	1
		4--Main Idea	3
		5--Using the Encyclopedia	4
01	4		
		1--Omitted	
		2--4 ways to decode unknown words	1
		3--Suffixes: Meaning	2
		4--The card catalog	4
		5--The Table of Contents	4
19	5		
		1--Main Idea	3
		2--Guide Words--Dictionary	4
		3--Homonyms	2
		4--Dictionary Re-spellings	1
		5--Letter combinations: the /sh/ sound	1
04	4		
		1--Omitted	
		2--VCCV: Syllables;	1
		Base words and endings	1
		3--Alphabetical Order	4
		4--Alphabetical Order	4
		5--The Glossary;	4
		Compound Words	2
14	5		
		1--The apostrophe: Contractions	2
		2--Pronunciation key for Homonyms	4
		3--Main Idea	3
		4--Drawing conclusions	3
		5--Pronouncing base words, prefixes and suffixes	1

Table 3.4 (cont'd.)

Teacher	Lessons Analyzed	Lesson Number and Skill Topic	Skill Category
22	4		
		1--Omitted	
		2--Str- Words	1
		3--Sequencing Events	3
		4--Apostrophe in possessives	2
		5--Context Clues	3
B. Less Effective Teacher Group			
11	5		
		1--Following Directions	4
		2--Sequencing Directions	4
		3--Suffixes for meaning	2
		4--Prefixes for meaning	2
		5--Root words & Affixes	2
02	4		
		1--No transcript available	
		2--Synonyms	2
		3--Prefixes: Meaning	2
		4--Plurals	2
		5--3 uses of the apostrophe:	2
07	5		
		1--Short vowel sounds	1
		2--Multiple comprehension skill topics	5
		3--Long and short vowel sounds	1
		4--Context Clues	2
		5--Using the Dictionary	4
08	5		
		1--Main Idea/Topic	3
		2--3 uses of comma	3
		3--Parts of speech: Noun, verb, adjective	2
		4--Finding details	3
		5--Sequencing events	3

Table 3.4 (cont'd.)

Teacher	Lessons Analyzed	Lesson Number and Skill Topic	Skill Category
21	3		
		1--Omitted	
		2--Omitted	
		3--Homophones	2
		4--Outlining;	4
		Noting details	3
		5--Prefixes: Meaning	2
20	3		
		1--Omitted	
		2--Omitted	
		3--Dictionary: meanings	4
		3--Cause-Effect	3
		4--Synonyms and Antonyms	2
		5-- Action/feeling words	2

SUMMARY OF LESSON TOPICS PER SKILL CATEGORY

(1) Word Identification: Decoding

More Effective Group = 8
Less Effective Group = 2
Total Lesson Topics = 10

(2) Word Identification: Meaning

More Effective Group = 6
Less Effective Group = 13
Total Lesson Topics = 19

(3) Text Comprehension

More Effective Group = 6
Less Effective Group = 6
Total Lesson Topics = 12

(4) Study Skills

More Effective Group = 8
Less Effective Group = 5
Total Lessons = 13

Table 3.4 (cont'd)

(5) Multiple (> 2) Topics

Less Effective Group	= 1
Total Lessons	= 1

Omitted Lessons

More Effective Group	= 4
Less Effective Group	= 5
Total Lessons	= 9

LESSON TOPICS INCLUDED IN ANALYZED LESSONS

MORE EFFECTIVE GROUP	= 28
LESS EFFECTIVE GROUP	= 27
TOTAL TOPICS	= 55

TOTAL LESSONS ANALYZED

MORE EFFECTIVE GROUP	= 26
LESS EFFECTIVE GROUP	= 25
TOTAL LESSONS	= 51

The data were prepared using qualitative transcript preparation procedures adapted from Mehan (1979a) for transcript format; Erickson & Schultz (1982) for identifying the event and participation structures of interactions, and those described by Mehan (1979a), and others (Bean, 1985; Cicourel, 1974; Green & Wallat, 1981; Gumperz & Herasimchuk, 1972; and Heap, 1980, 1982) for identifying teacher-student verbal interaction sequences and discourse events. Teacher-student verbal interaction sequences and discourse elements were identified from the combined verbal record of the lesson available on audio-tape and in the written version rendered in transcript form.

Each transcript data set was treated according to the four-step qualitative procedure developed as part of the pilot study described in Chapter I. The steps in data collection were the following:

(1) Elicitation identification;

(2) Reformatting the transcripts;

(3) Lesson phase and sequence identification; and

(4) Determination of lesson length: Real time and transcript lines.

Each of these steps is described below.

<u>Step One: Procedures for Identifying Elicitations</u>

Questions and elicitations were identified while I simultaneously read each original transcript and listened to its audiotape. This listening-reading procedure made it possible to determine teacher utterances intended as

elicitations, as marked by intonation patterns and vocal inflections, which might otherwise not be discernable based on typed copy alone. Teacher initiations which function as questions in lesson discourse may not appear as such in print because of written punctuation conventions for marking statements versus interrogatives. Thus, the audiotape allowed identification of statements and directives in the typed transcript that functioned as questions on the basis of vocal inflections and if they demanded a student response.

Additionally, the fidelity of the original transcriber's copy was checked via the listening-reading procedure. During this step, I made additions and corrections to the typed teacher-student dialogue prior to reformatting the transcripts for subsequent sequence and elicitation analyses.

Step Two: Procedures for Reformatting the Transcripts

After completing necessary corrections and additions to dialogue in the original transcript, I retyped each lesson transcript onto forms which followed the three column format suggested by Mehan (1979a) for organizing and highlighting initiations, responses and feedback discourse units. The form used is reproduced in Appendix 3A. Additionally, teacher elicitations were typed in upper case lettering to facilitate their identification during analysis. The revised transcript format made it easier to visually identify lesson phases, teacher elicitations, and

teacher-student interaction sequences. The efficiency of this format for subsequently analyzing transcripts can be seen in the sample transcript provided in Appendix 3B.1.

Step Three: Procedures for Identifying Lesson Phases and Sequences

In order to examine the positioning of various types of elicitations within the skill lessons, it was necessary to determine the structural format of instructional events for each lesson for each teacher. I read the reformatted transcripts to identify the primary discourse event episodes, called "phases", in each lesson (e.g., introduction, instructional presentation, guided practice, recitation practice, reviews, closure), and the teacher-student interaction sequences within those episodes. Phase and sequence definitions were provided in Chapter I.

Phases

Principal events identified in these skill lessons included an opening or introduction; presentation of information--monologue or interactive; an interactive guided practice phase; an interactive recitation practice phase; independent student written practice; reviews; lesson closure; and skill application. Each lesson was structurally characterized in the transcript for later transfer of this information to a visual lesson map during analysis. Phase boundaries were marked in red; sequence boundaries were marked with a penciled dashed line. Length of phases and sequences were recorded in time units (minutes/seconds) and

transcript line counts. The Roman numeral phase code designations (used mainly for lesson mapping) and corresponding phase descriptions are shown in Table 3.5. Phase identification, and how phases were marked in transcripts, are illustrated in the sample transcript provided in Appendix 3B.1.

Sequences

Instructional sequences and teacher-student interaction sequences (defined in Chapter I) were identified in each lesson transcript. The rule of thumb followed for sequence identification was that the beginning of a sequence was marked with a teacher statement and/or elicitation initiating discourse about information relative to an identifiable skill subtopic or text example (i.e., word, sentence or passage) being used. The end of a sequence was marked by some kind of teacher closure to that particular subtopic, usually in the form of positive/negative feedback, an evaluative comment or an elaboration of information, indicating that the information from a student had been satisfactorily obtained after one or a series of teacher elicitation-student response turns.

Figure 3.1 illustrates how I applied these conventions to sequence identification in transcripts. The excerpt was taken from a lesson on using context clues to determine word meaning. In this example, the first three instructional sequences of the lesson's Introduction phase are shown. [Text symbols: Uppercase text = elicitations; underlined words = intonational stress; slashes = pauses.]

Table 3.5

Lesson Phases

Code	Interpretation
I	Introduction: Teacher verbally signals beginning of the lesson.
IIA	Monologue Presentation: Teacher initiates expository statements to inform students by providing information of some kind; verbal interactions with students do not occur.
IIB	Interactive Presentation: Teacher primarily initiates expository statements to inform students but does so in a verbally interactive format that involves student participation in the provision of information needed to perform subsequent lesson tasks; these sequences lack the systematic use of the initiation-response-feedback sequence structure; may include teacher's presentation of information in response to a student question or remark.
III	Guided Practice: Teacher initiates a series of interactions designed to allow for student use of the skill or strategy in text-based (word, sentence, passage) examples; teacher talk is characterized by extensive use of elaborations following student responses to elicitations in conjunction with evaluating response correctness.

Table 3.5 (cont'd.)

Code	Interpretation
IV	Recitation Practice: Teacher initiates a series of interactions designed to allow for repeated opportunities to use the skill or strategy in text-based examples usually associated with group completion of a worksheet or boardwork prior to individual completion of same or similar task; focused on correct answer-getting characterized by simple feedback certifying answers, minimal elaborations following student responses and sequences which are typically extended only if the lesson task requires more than a single answer to be correct.
V	Independent Practice: Students work individually on an assigned task associated with the lesson; these were not numerically labelled as instructional sequences in the study, but are denoted by a "P" which interrupts another phase, typically verbal guided or recitation practice because it allows students to do a task individually prior to group processing of answers.
VI	Closure: Teacher initiates statements or elicits responses signalling the official end of the lesson; typically occurs through a major change in academic topic, dismissal of the group, or directives to complete assigned independent seatwork.

Table 3.5 (cont'd)

Code	Interpretation
VII	**Review**: Teacher initiates statements or elicits responses, either as a transition to another phase (i.e., guided or recitation practice prior to concluding lesson) or brief interruption of a practice phase, that explicitly intend to refocus attention on the task and/or skill topic of the lesson, not the informational content of examples being used for practice. This phase is intended to assess student understanding of aspects related to the skill topic.

Tchr. 22, Lesson 5, 4-18-83	Interpretation
T: The main ones that I want to work with you today on are making sense of words / and how to figure out words using <u>context</u>. We talked about this.	<u>Sequence 1</u>: Teacher is sole speaker making statements to introduce the lesson topic.
WHAT IS CONTEXT FIRST OF ALL? Context. /	<u>Sequence 2</u>: Teacher initiates new sequence about the lesson topic by eliciting information from students to define the term `context'.
S: Oh, oh (hand up)	
T: ONE PERSON KNOWS WHAT CONTEXT MEANS? // WHAT DOES CONTEXT MEAN, WAYNE?	
S: (inaudible response)	
T: OKAY, WAYNE, THINK ABOUT WHAT I'M GOING TO SAY. / "Find the meaning of the word by using context clues." WHAT DO I MEAN? / DOES THAT MEAN TO GO AND ASK THE TEACHER?	
S: No.	
T: OKAY, WHAT DOES THAT MEAN? / / Cone on, we just did this last week.	
S: It means like the meaning of something.	
T: True, BUT HOW? / Find the meaning of the word by using <u>context clues</u>. REMEMBER, CONTEXT AND ANOTHER WORD ALMOST SOUND THE SAME? //	
S: (Inaudible)	
T: Alright, you're trying to figure out how to sound out. I WANT TO KNOW WHAT THE MEANING OF IT IS. I don't have a dictionary, and I can't ask an adult	

Figure 3.1

<u>Transcript Example of Serial Sequence Identification</u>

Figure 3.1 (cont'd.)

S: (Inaudible)

T: Alright, SO YOU LOOKED AT.../

S: Context.

T: WHAT IS THE CONTEXT?

S: (Inaudible)

T: Good. You looked at the context. BUT WHAT IS THE CONTEXT, JASON?

S: Picking out words around the sentence / to make it.

T: Okay. / — Teacher closes the sequence by signalling acceptance of student's answer.

HOW IS THIS WORD BEING USED? (writes on board) Remember if we had a word, let's say 'snicklefress', and I told you "I pounded a nail into a board with my snicklefress." Now, you have no idea what a snicklefress is, but by the way I used it, the other words in the sentence that I used it in, YOU CAN SORT OF GUESS THAT IT MIGHT BE A WHAT? — Sequence 3: Teacher shifts focus to new subtopic, an example of context use.

Ss: Hammer.

T: A hammer or some type of tool. Context or the content always being contained in the sentence it is being put into. REMEMBER THAT? // We worked on these. — Teacher certifies students' answer by repeating it and elaborating. This ends the example sequence.

Alright, today we are going to do some work figuring out the meaning of words by the way they are used.

.....

(lesson continues) — The teacher continues the lesson. She again shifts the subtopic focus to a different aspect of the topic.

Student-initiated interaction sequences were identified, marked and numbered sequentially with other sequences within a lesson. However, these interaction sequences were generally not included in the analysis because of their overall scarcity in the transcript data and the absence of teacher elicitations within them.

Summary of Step Three: Procedures for Identifying Lesson Phases and Sequences

This section described the data collection procedures used to identify lesson phases and instructional sequences in the skill lesson transcripts used as the data base for the study. Principal phases identified included an introduction; presentation of information--monologue or interactive; an interactive guided practice phase; an interactive recitation practice phase; independent student written practice; reviews; lesson closure; and skill application. The conventions guiding the identification of instructional sequences were described and examples of actual sequences were provided to illustrate.

Step Four: Procedures for Determining Lesson, Phase and Sequence Length.

Following completion of the phase and sequence identification process, I measured the total length of the lesson, phase length and sequence length, in real time, as well as by counting total transcript lines and lines of teacher talk.

To determine the length of the lesson and its structural components in real time required once again listening to the audio-tape of the lesson while simultaneously recording time notations at roughly five to ten second intervals, or at phase and sequence boundaries in the typed transcript. A hand-held digital stopwatch was used to time the lessons.

It was necessary to develop summing procedures to determine total time allocated to particular phases because in several lessons, phases of a particular kind recurred. For example, presentation or practice phases might be interrupted by review phases; or additional presentation phases might be embedded in practice phases. Thus, after phases were marked on a transcript and timed, I examined the transcript for recurrence of phases. All segments of a lesson identified as presentation phases were considered together for purposes of determining time spent during the lesson in that phase. Likewise, all guided practice, recitation practice, independent practice, or review phase segments were considered together to represent the total lesson time spent in a particular phase.

To determine lesson, phase and sequence length in transcript lines, conventions governing the length of a line were established. A full transcript line consisted of 75-80 elite type characters (the equivalent of one line of original transcript copy or 2.5-3 lines of reformatted transcript column copy). A new line was counted each time the speaker changed. For example, if a student spoke one word as a

response to the teacher's elicitation, the student's turn counted as a line of transcript. I recorded line counts of total discourse and teacher talk, specifically, on the reformatted typed transcript. Length designations are included on the left side of the sample transcript in Appendix 3B.1.

The record keeping form shown in Appendix 3C was used to record summative information for each teacher's lessons regarding phase and total lesson length in real time and transcript lines (total lines and lines of teacher talk). While the form orders phases in a particular sequence, it is important to note that phases did not necessarily occur in a lesson in that order. This form was used only for recording length information. Positioning information was reported on visual lesson maps, described later as part of data analysis Steps Four and Five.

Summary of Data Collection Procedures

This section described the procedures used to collect data from lesson transcripts. The data were prepared for analysis in a series of four steps. First, the original transcripts were read while listening to the audiotapes to identify elicitations. Second, the original transcripts were reformatted using the transcript structure developed by Mehan (1979a). Third, lesson phases and individual instructional sequences were identified. Fourth, real time and transcript line metrics were used to determine the length of lesson phases and individual sequences.

Data Analysis Procedures

This section describes how the transcript data were analyzed following use of the collection procedures detailed in the previous section. The transcript data were analyzed using a series of procedures that combined both qualitative and quantitative methods. Qualitative interaction analysis procedures were adapted from those suggested elsewhere (Cicourel, 1974; Erickson & Shultz, 1981; 1982; Green & Wallat, 1981; Gumperz & Herasimchuk, 1972; Heap, 1980, 1982; Mehan, 1979a). Quantification procedures were employed in the form of frequencies and computed percentages of coded lesson discourse events, and statistical tests performed on aggregated data during the comparison of the more and less effective teacher groups.

Discourse analysis strategies, developed and used by Mehan (1974, 1979a, 1979b, 1982) in his ethnographic work analyzing classroom interactions, were particularly instructive for determining how to proceed with the analysis of lesson transcripts once lesson phases, interaction sequences, elicitations, and feedback elements were located. Of paramount importance was developing an analytic scheme that would permit coding of lesson events involving questioning behaviors while, at the same time, preserving how those behaviors occurred in the overall interactional flow of the lesson.

According to Mehan (1979a), coding can be useful in a descriptive analytic scheme if it is viewed as a heuristic device for temporarily "stopping the action" within the on-going lesson interaction. On this point, he observed:

> Classroom interaction, like other forms of interaction, has a unitary character; its seams are tightly woven.
>
> The purpose of analysis is to make the unitary discrete by exposing its seams and dividing the whole into parts. This act of analysis, when applied to [our] classroom materials, requires the assignment of status . . . to portions of the interactional flow. As talk and gestures are coded as instances of categories, the integrity of this flow is disturbed. The very act of coding requires that materials be treated as conforming to the law of the excluded middle, that is, each instance can be placed in only one category at a time.
>
> This coding activity is not an end in itself, but a means to an end. We recognize at the outset that the boundaries between events are not discrete, that speech acts perform multiple tasks simultaneously, that the meaning of an action is not necessarily shared among participants or between participants and observers.
>
> We code our materials into discrete categories because we do no want to be overwhelmed by the very flux that we are trying to comprehend. Interaction is too massive to be addressed in its entirety all at once. Our structural analysis facilitates a closer examination of representative instance of certain categories or all instances of particularly interesting categories. (p. 29)

Thus, for this study it was important that information obtained from the use of coding schemes, classifying various discrete dimensions of teachers' questioning in skill lesson interactions, be viewed in combination with information about where categorized elements occurred within the overall structure of the lesson.

Preliminary descriptions to characterize identified lesson discourse elements were developed during the pilot study. I identified salient features based on repeated occurrences primarily in the pilot data from four teachers' transcripts.

For the full study, the categorical schemes used to capture various descriptive aspects of discourse features were those developed during the pilot study, or those adapted or modified whenever it became apparent that existing systems would not accommodate emerging patterns. For example, late additions to the analytical descriptions included sequence codes for cognitive knowledge type, evaluation element content, and instructional purpose. I included these codes to provide a more in-depth characterization of instructional interactions. Their inclusion reflects the on-going process of conceptualizing the instructional functions of interactive discourse elements as data were analyzed and interpreted. When new codes were added, transcripts which had already been rated were reexamined and recoded according to the updated analytical scheme (Erickson & Shultz, 1981; Mehan, 1979a).

Descriptive features identified as salient for contributing to characterizations of interactive sequence functions included sequence structural form; sequence topical content; evaluation information content; knowledge focus; and instructional purpose. Elicitations were characterized in terms of the content focus of information embedded in the

request for a student response. Feedback elements were characterized by their topical content focus and structural form as an evaluative remark, probe or more extensive elaboration. Categorical terms used within each descriptive coding scheme are listed and defined below. I reread each transcript several times to code sequences, elicitations and feedback elements for each of the classification schemes.

The data analysis proceeded through the following eight steps:

(1) for each of the 51 lessons, elicitations within interaction sequences were identified and classified according to content information categories;

(2) for each of the 51 lessons, the evaluation elements within interaction sequences were identified and classified based on topical content focus and structural form categories;

(3) for each of the 51 lessons, sequences were identified and classified into categories of structural form, topical information content focus, knowledge type, and instructional purpose;

(4) for each of the 51 lessons, the coded information from the transcript was transferred onto a lesson map which showed the positioning of sequence categorical data within lesson phases;

(5) for each of the 51 lessons, visual profiles depicting discourse characteristics of principal (phase) and secondary (sequence) lesson events,

and their positioning and duration were constructed;

(6) for each teacher data set, the coded data were quantified by tallying frequency information and computing percentages of lesson elements;

(7) the questioning patterns for the more effective and less effective teacher groups were characterized according to the following procedures: (a) the reduction of teacher-level quantified data to create an overall group lesson profile; and (b) the development of lists of questioning practices characteristic of each teacher as observed across lessons; and

(8) the questioning practices of the two teacher groups were compared through the following procedures: (a) the use of statistical tests for differences in teacher level findings; and (b) the qualitative description of differences by appeal to phase level findings and example instances of recurring questioning practices.

Each of the eight steps are described in the following sections.

Step One: Procedures for Identifying and Classifying Elicitations within Interaction Sequences

Descriptive categories and conventions for coding elicitation types were developed during the pilot study. Some modification of the coding scheme took place during the

extensive analyses undertaken for the full corpus of transcripts. Most modifications consisted of combining categories which proved to be descriptively restrictive, redundant or narrow. For example, a category called "meta-process" elicitations in the pilot study was combined with the "process" elicitations category for the full study because there simply was not enough evidence in the full data set to make it worthwhile to characterize the former.

As discussed in Chapter II, existing descriptive analytical schemes for coding teacher questioning were not well-suited for the kind of questioning practices encountered in reading skill lessons because most were developed based on analyses of teacher questioning during basal story-based comprehension lessons. Furthermore, this study was concerned with teachers' functional uses of elicitations within lessons in terms of the specific types of information or responses sought from students during these instructional episodes (Mehan, 1979a). For these reasons, I devised a classification system, derived in part from that developed by Mehan, that seemed better suited to depicting the kinds of elicitations I encountered in skill lessons.

For this portion of the analysis, I reread the reformatted transcripts to determine the content focus of each teacher elicitation identified during data collection. Within each identified interaction sequence, elicitation identity was confirmed, and provisional categories of content focus and function used during the pilot study were

verified or modified as the transcripts were examined. Also, as new uses for elicitations were identified, new categories were added. I then assigned each elicitation a code by placing the appropriate numerical designation in a circle beside the elicitation. When it was clear that an elicitation might be coded into more than a single category, its major role in the sequence was determined by the researcher based on an interpretation of the instructional context established by the teacher.

Chapter I presented the definitions of major categories used for the elicitation coding scheme in this analysis. Briefly, these included the following. Product elicitations were those posed to obtain factual or literal level information. Process elicitations were those posed to obtain information about the mental strategies students used to perform the skill. Usefulness elicitations prompted student to describe when they would be able to use the skill while reading text. Academic Management and Task Logistics elicitations were usually directives initiated by the teacher asking students to perform tasks associated with completing activities according to established procedures or directions. Table 3.6 shows the descriptive coding scheme used to classify elicitations. Appendix D.1 provides example sequences coded with the four elicitation codes of interest to illustrate how various categorizations were assigned in the data.

Table 3.6

Elicitation Content Purpose Codes

Code	Interpretation
1	Product: Requests literal level or factual response.
3	Process: Requests information in response about how to perform the skill or strategy to obtain a correct answer when it is used when reading.
5	Usefulness: Requests information in response specifying conditions when the skill is useful.
6	Academic Management: Requests a verbal or nonverbal response needed to perform the academic tasks of the group lesson and associated in a direct way to the lesson topic.
8	Task Logistics: Requests a verbal or nonverbal response designed to facilitate students' following directions to complete management tasks associated with creating, maintaining or restoring smooth activity flow during the lesson or independent seatwork.
Other	This category represents the combination of elicitation types not of current interest, but nevertheless, coded for future study. It includes the following: 9--Student behavior management 10W--World knowledge background 10S--Skill knowledge background 11--Requests clarification 12--Requests verification 14--Assesses understanding 15--Requests attentional focus

Step Two: Procedures for identifying and Classifying Evaluation Elements within Interaction Sequences

Mehan (1979a) observed that the evaluation aspect of teacher-student interactions is a unique and essential feature of instructional discourse. In classroom lessons it is rare to encounter a teacher's use of questioning without the use of evaluation. In this regard, interaction sequences are conversational speech acts which have, according to Mehan, interdependent "prospective" and "retrospective" features. He stated:

> Any given act has a range of potential meanings. Its actual meaning is not known until the entire sequence is completed. The meaning of an act initiated by the teacher, for example, is prospective. Its actual meaning is realized retrospectively, when the act performed by the student is evaluated by the teacher. Likewise, the status of a student's reply as answer or non-answer is not determined until the teacher contributes an evaluation . . .
>
> . . . While evaluation seldom occurs in everyday discourse, it is an essential component of an instructional sequence. It contributes information about the initiator's intended meaning to the negotiation of a mutually acceptable reply . . . (Mehan, 1979a, p. 64)

In other words, when examining the role of teachers' questioning practices in lessons, it is necessary to consider how elicitations and evaluation elements interact as part of a process of initiating, sustaining and closing interaction sequences with students.

I decided to also code feedback elements early in the full study after transcripts were reformatted and sequences identified. At that time it became apparent that there was

more to teacher questioning practices than simply initiating interactions with questions and directives for student responses. The manner in which the teacher responded to student responses appeared to have an important influence on the instructional outcome of an interaction sequence. Furthermore, elicitations commonly occurred in the evaluation column on the reformatted transcripts but typically in interior positions in interaction sequences, making their role within sequences of interest.

In the skill lessons examined for this study, I observed that teacher feedback to students seemed to perform a certification act, allowing students to know the status of their response to an elicitation or directive in a particular interaction sequence. Moreover, the length of teachers' evaluations of responses varied widely across sequences--some evaluations (positive and negative) were phrased as short acknowledgements, while others were extensive informational expansions. For these reasons, I was interested in developing a descriptive system that would account for the structural form of the evaluation portion of an interaction sequences, as well as the positive and negative aspects of response certification. The three categories analyzed for this study represent aggregations of subcategories noted in Table 3.7. For example, the feedback element, elaboration, was subdivided for actual coding into "positive elaboration" and "negative elaboration" when it became clear that there

were differences in teachers' usage and sufficient instances of each in the data.

Evaluation elements were coded by placing the letter code, corresponding to the appropriate description of the feedback (shown in Table 3.7), beside the teacher's evaluation in the lesson transcript. Although feedback elements were coded with the designations most closely describing their form and function, the structural aspects were of most interest for this analysis as can be seen from how the discrete categories were combined. The selected sequences in Appendix 3D.1 show examples of evaluation element coding.

Summary of Steps One and Two: The Identification and Classification of Elicitations and Evaluation Elements within Interaction Sequences.

The first two steps of transcript data analysis involved describing the discrete discourse elements in instructional sequences, i.e., elicitations and feedback or evaluation elements, in terms of their respective coding schemes. These coding schemes were described and example interaction sequences provided to indicate their application. The use of Mehan's modifications for formatting classroom lesson transcripts to more easily view the initiation-response-feedback discourse pattern in teacher-student interactions was illustrated in the presentation of examples.

Table 3.7

Evaluation/Elaboration Structural Form Codes

Code	Interpretation
Simple: Positive (P and PR) Negative (N and NR)	Response Certification: Teacher gives feedback to a student response in the form of a Positive or Negative one/two word certification, such as "Good, Okay, No." Also includes teacher verbatim Repetition of the student's response as a way of certifying correctness or incorrectness.
Elab: Positive (PE) Negative (NE) Correction (NC)	Elaboration: Teacher provides an extensive comment following the student response that expands the answer or provides additional clarifying or interpretive information about the nature of the response; includes both positive and negative commentaries which serve as response certification or occur in conjunction with simple feedback; includes negative certification coupled with statement of the correct answer.
Elicit: Negative Probe (NPr) Probe for More (PrM) Probe for Repeat (PrR) Elicit Student Certification (Esct)	Elicitation Probe: Teacher responds to a student's response with an elicitation probe, thus withholding certification until additional student responses responses are obtained. Elicitation feedback occurs only in extended sequences of interaction with students. Includes: Negative Probe; Probe for More Information; Probe for a Repeat of the response; and Elicit Student Certification of correctness of another students response.

Step Three: Procedures for Identifying and Classifying Instructional Sequences

Instructional sequences, particularly interaction sequences, were characterized by applying several coding schemes to obtain a multidimensional description for each sequence. After systematically identifying the lesson phase placement of teacher-initiated interaction sequences, I coded each sequence for structural form; general informational content focus; informational content focus of teacher evaluation of student responses; type of cognitive knowledge focus (in terms of its focus on declarative, procedural or conditional knowledge about the skill); and its instructional function based on elicitations (assessment or assistance of various kinds) in the sequence overall.

The codes developed for these categorical schemes were assigned per lesson sequence and recorded in the "Comments" column on the reformatted transcript. This made it possible to examine the overall characterization of an individual sequence on all coded dimensions. The lesson transcript in Appendix 3B.1 shows how sequence information were coded and recorded.

Each coding scheme used in the analysis is presented and discussed below. Appendices 3D.2 and 3D.3 provide examples to illustrate the kinds of sequences in skill lessons that received particular coding designations. Examples were selected from across the corpus of skill lesson transcripts. An effort was made to represent at least one

lesson for each teacher included in the study. Examples are given and briefly described in terms of the sequence characteristics they are intended to illustrate.

First, the codes for sequence structural form are presented. Examples of each type are shown in Appendix 3D.2. Second, the codes for sequence content, evaluation content, knowledge types, and instructional purpose are presented in turn. Example interaction sequences, illustrating the use of these codes, have been organized in Appendix 3D.3 according to the twelve categories of instructional purpose since it was the most extensive scheme in terms of numbers of categories. Each example, described in terms of the four sequence coding schemes, was selected to illustrate how these coding schemes were unitarily applied during the analysis. Because the aim here is to focus on particular aspects of a sequence relative to its receiving a particular code in a particular categorical scheme, descriptions may necessarily seem somewhat unidimensional.

Code 1: Sequence structural form

Background. The microanalytic studies of Mehan (1979a) and Farrar (1983, 1984) were particularly helpful for designing this coding scheme to address how teacher and student talk was organized into sequences of interaction in skill lessons. Mehan identified and characterized two basic organizational schemes for teacher-student interactions which were adapted for these data: three-part instructional sequences and extended sequences.

Three-part instructional sequences consisted of an initiation act, followed by a reply act, and ended with an evaluation act. Mehan observed that in classroom lessons, teacher most often initiate with elicitations (including directives), students reply with the provision of academic information or a nonverbal procedural action, and teachers evaluate the student replies. In Mehan's data, this basic sequence occurred most frequently and formed the basis for extended sequences of interaction.

Extended sequences of interaction occurred in lessons when the student's reply following an initiation act was not immediately closed with an acknowledgment through positive evaluation. In characterizing the situations in which sequences are likely to be extended, Mehan stated:

> Sometimes students do not answer at all; sometimes they give partially complete answer; sometimes they answer incorrectly, or with an asymmetrical reply (that is, a "response" when a "reaction" is in order). If the reply called for by the initiation act does not immediately appear in the next turn of talk, teacher-student interaction continues until symmetry between initiation and reply is established. The initiator employs a number of strategies, including (1) prompting incorrect or incomplete replies, (2) repeating, or (3) simplifying initiation acts until the reply called for by the original initiation act appears. The result is an extended sequence of interaction between teachers and students. (pp. 54-55)

Structural Form Codes. For this study I adapted Mehan's (1979a) basic categorizations with modifications to accommodate particular sequence organizational patterns that appeared in several skill lesson transcripts. Table 3.8 presents the codes used to identify sequence structural

form. Appendix 3D.2 provides examples taken from lesson transcripts to illustrate each sequence structural form type.

The term "Simple Sequence" was applied to instances of the three-part interaction sequence; and the term "Extended Sequence" was applied to sequences containing continuing interactions on the same topical aspect. Modifications included the following.

First, there were a number of sequences that could be identified in which the teacher was the sole speaker. The teacher initiated a topic, discussed it, and closed it without any input from students. I called a sequence of this type "Teacher Monologue".

Second, there were sequences that again involved the teacher as the major speaker but had intermittent input from students, lacking the formal interactive nature of three-part or extended interaction sequences. These sequences often contained academic management elicitations directing students to proceed with the task at hand in some way; or the teacher interspersed elicitations as a means for maintaining student attention during her monologue. Sequences of this type frequently lacked an evaluation element. I called this kind of sequence "Teacher Interactive Monologue".

Third, two distinct situations seemed to prompt the teacher's extension of an interaction sequence. First,

Table 3.8

Sequence Structural Form Codes

Code	Interpretation
TM	Teacher Monologue: Teacher is the only speaker in the sequence, initiating a topic and holding the floor. Elicitations, if any, are directives for nonverbal attention getting; no verbal interactions included.
TMS	Teacher Interactive Monologue: Teacher is the primary speaker in this basically monologue statement; It may include elicitations for student verbal responses which primarily serve an attentional devices but are not systematically formatted as a structured initiation-response-evaluation sequence. Some may include directives for student verbal or nonverbal responses.
S3	Simple Sequence: This conforms to Mehan's (1984) description of basic teacher initiation on a topic with an elicitation-student response-teacher evaluative response which signals closure to that particular topical interaction.
ES	Extended Sequence: A broad term to characterize a systematic sequence initiated by the teacher's elicitation of a student response in the form of the S3 sequence but the teacher sustains the topical interaction seeking one or more

Table 3.8 (cont'd.)

	additional student responses either with the same or different students, and following either an accepted student response or an incorrect or unaccepted response.
EAss	Extended Sequence--Accepted Response-same student: See above definition for ES; the verbal participants are the teacher and a single student extended beyond the student's giving a correct or accepted response to a teacher elicitation.
EAds	Extended Sequence--Accepted Response-different students: See above definition for ES; the verbal participants are the teacher and two or more students involved in the same topical interaction extended beyond the S3 form following a correct or accepted response to a teacher elicitation.
EIss	Extended Sequence--Incorrect (or Unacceptable) Response-same student: See above definition for ES; the verbal participants are the teacher and a single student following a student response which is incorrect or unacceptable. The teacher continues probing the student until an acceptable response is obtained which permits sequence closure.

Table 3.8 (cont'd.)

EIds	<u>Extended Sequence--Incorrect (or Unacceptable) Response-different student</u>: See definition above for ES; the verbal participants are the teacher and two or more students following an incorrect or unacceptable student response in a S3 format; the teacher sustains the topical interaction until the aforementioned student response is corrected acceptably to permit sequence closure.

simple sequences seemed to be extended relative to the degree of acceptability of student responses or when the processing of a text example required multiple probes and responses in a single sequence. Incorrect or incomplete answers seemed to most often provide the basis for sequence extension (as Mehan also observed). Several instances were noted, however, where the teacher accepted a student reply with a positive evaluation yet continued the interaction by probing for additional information (congruent with the subtopic under discussion) before providing sequence closure with a type of evaluation which might be characterized as a "mega-evaluation". Although interaction sequences appeared most often to be extended when a student responded incorrectly to an elicitation, there were enough sequences extended following correct or accepted responses to warrant investigation of teachers' uses of this form.

Second, simple interaction sequences were extended with a single student or several different students. While most extended sequences involved multiple students as respondents, several teachers, on occasion, prolonged interaction sequences with individual students following correct, as well as incorrect student responses. That several teachers seemed to have patterns in this regard will be discussed in Chapter IV.

To capture nuances in sequence extensions, the extended sequence code was divided into four subcodes: (a) Extended Sequence--Accept, same student;

(b) Extended Sequence--Accept, different students;
(c) Extended Sequence--Incorrect, same student; and
(d) Extended Sequence--Incorrect, different students. The four subcodes sorted out the two aspects of extended interactions that looked most promising for their ability to inform descriptions of skill lesson questioning behaviors.

Thus, there were several kinds of teacher-student interactions which extended beyond the basic three-part simple sequence form. Interactions with extended structure, like the simple sequences described above, predominantly occurred in Guided or Recitation Practice lesson phases. Examples representative of extended sequence patterns identified in the lessons of teachers in both groups are presented in Appendix 3D.2 (examples 17-37).

Summary of Structural Form Coding

This section presented the coding scheme developed and used to characterize instructional sequence structural forms in the fifty-one skill lessons analyzed for the study. Four major forms were described, and examples of sequences receiving these codes were provided. The four major codes were: (1) Teacher Monologue; (2) Teacher Interactive Monologue; (3) Simple Sequence; and (4) Extended Sequence. Four extended sequence form variations were identified based on two salient features that seemed to influence the structural outcome and characterize teacher-student interactions: (a) student response acceptability and (b) the number of students participating in the interaction.

Sequence Content and Purpose Codes

This section describes and provides example sequences for the other coding schemes (Sequence Codes 2 - 5) used to characterize teacher-student instructional interactions. In the previous section each code designation for sequence form (Sequence Code 1) was illustrated with separate examples. In this section, each of the four descriptive schemes used to examine aspects of sequence content and function are characterized and shown in Tables 3.9 through 3.12. These are (1) sequence topical information content; (2) evaluation/elaboration informational content; (3) knowledge type; and (4) instructional purpose. Using the instructional purpose codes as an organizing framework, Appendix 3D.3 provides a series of forty-one example sequences which are representative of instances of instructional interactions found in the entire data set with particular combinations of characteristics representing these four coding schemes. These examples illustrate how the four descriptive schemes were jointly applied to analyze instructional interaction sequences.

Background. The pilot study analysis of elicitation types confirmed that simply tallying and describing questioning in terms of isolated discourse elements would be limiting in terms of trying to understand how teachers used questioning behaviors in skill lessons to promote instructional outcomes. Furthermore, as lesson phases and instructional sequences were identified, it became clear

that different teachers were communicating different, complex "messages" about reading skills to students through their elicitations in the course of these lessons.

While the identification of different sequence structural forms provided a start in characterizing differences in how skill instruction was conducted, the means were needed to describe the messages being communicated by the teacher discourse within these structural arrangements. Multidimensional characterizations of questioning practices, gained by combining the coded descriptions for a given sequence, would contribute toward greater precision in describing questioning patterns in the global context of the reading skill lesson.

In asking "What is going on here?" relative to the content and function of verbal interactions within sequences, I first identified three broad areas which seemed to capture message dimensions of the interplay between initiating statements and elicitations, and evaluative statements and elicitations in sequence teacher talk. These were messages about the topical information content being manipulated per sequence relative to the lesson skill topic; messages about the kind of knowledge about the skill teachers' communicated as important for students to learn; and messages about the teachers' instructional purposes via elicitations, that is, whether teachers used elicitations in sequences to find out what students knew about aspects of skills (assessment) or to guide students' acquisition of

knowledge about using skills in tasks related to reading (assistance).

To specify each of these broad areas of sequence content and function, four descriptive schemes evolved during the early stages of the full data analysis. The goal was to create sufficient categories for a particular dimension to make it possible to classify each sequence. I developed categories of topical information content based on observations of recurring topical areas around which various portions of lessons seemed to revolve. The codes for cognitive knowledge type were developed to reflect recent work by other researchers in the area of characterizing strategic reading. Instructional purpose codes were developed by combining my observations about the content foci of skill lesson instructional sequences with the findings of recent classroom observational research on reading instruction. If new categories were added or existing categories combined or deleted at any point as transcripts were examined, transcripts which had already been coded were reread and recoded if necessary. The final versions of the coding schemes used to analyze content and functional dimensions of the instructional sequences in the corpus of fifty-one skill lesson transcripts are described in the next section.

Code 2: Sequence Topical Information Content Code:

Given the general skill topics around which skill lessons were organized, teachers in this sample addressed primary topics through several secondary topical areas in the

teacher-student interactions within each lesson. An individual instructional interaction sequence could be described on the basis of the teacher's discourse focus on a particular secondary topical information area. Teacher talk, especially elicitations, in these skill lessons centered on four areas: (a) information about the nature of the skill being taught and its important features; (b) the subject content of example text items used to frame the presentation of the skill and provide students with practice using it; (c) student experiential prior knowledge which might contribute to learning about the skill and its use or to understanding practice examples; or (d) information about the directions and task procedures for the activities included in the lesson.

When the overall content focus of a sequence did not appear to relate directly to accomplishing goals inherent in the primary lesson topic, a code called "Other" was used. Examples of sequences receiving this code were those focused on discussing information about previously read basal text stories, or aspects of classroom or school activities which were not directly linked by the teacher to the lesson topic.

The descriptive scheme developed to code instructional sequences for their topical information content is shown in Table 3.9. The example sequences in Appendix 3D.3 illustrate the use of this coding scheme.

Table 3.9

Instructional Sequence Topics--
Topical Information Content Code

Code	Interpretation
1	Student background/experiences
2	Explicit mention of information about the skill and its characteristics
3	Text-based example content
4	Information about task/assignment directions
5	Other: Especially reference to informational content about a previously introduced story

Code 3: Evaluation Information Content Code: During the coding of sequences for their topical information content, I noted a recurring phenomenon in several sequences. While the teacher might focus initiating elicitations topically in one area, the information focus of evaluations to students' responses might be focused on topically different content. To illustrate, the content focus of sequence elicitations might be on a practice example while the teacher's evaluative remarks elaborated on particular features of the skill being used by students to respond to those elicitations about the example. Likewise, the teacher might elicit information about skill features yet focus evaluation remarks on upcoming activity task procedures or the appropriateness of the behavior of group members.

To capture nuances such as these in the content congruence between teacher elicitations and evaluations of student responses, I developed the coding scheme presented in Table 3.10. The example sequences in Appendix 3D.3 illustrate the use of the evaluation information content coding scheme.

In effect, each instructional sequence involving teacher-student interactions received two content codes, sequence topical information content based on the content focus of the entire instructional sequence, and evaluation information content based on the focal content specifically identified in teacher feedback to student responses. This pairing of content codes allowed me to analyze the consistency in sequence content foci between elicitations and evaluations.

Table 3.10

Evaluation Informational Content Codes

Code	Interpretation
1	Related to skill information
2	Related to example content
3	Related to task directions/academic procedures
4	Other: Not directly related to the content of the student response

Code 4: Cognitive Knowledge Type Code: As noted in Chapter II, an area of current interest among cognitive psychologists and reading researchers involves

characterizing reading as a strategic act and readers who are aware and mindful of how they perform that act to get meaning from text as strategists (Baker & Brown, 1984; Brown, 1980; Paris, et al., 1983). An important aspect in the study of strategic reading is understanding the relationship between reading instruction and readers' development as strategists (cf., Duffy & Roehler, et al., 1986b; Fitzgerald, 1983; Mangano, et al., 1982; Paris, et al., 1983; Paris, et al., 1986; Pearson, 1985; Pearson & Tierney, 1984; Roehler, Duffy & Meloth, 1985; Sanacore, 1984). In Chapter II, I reported that much recent attention in skill and strategy instruction research has been on how teachers explain information about reading skills to learners through expository statements. I adapted this coding scheme to provide a means for analyzing how teachers might be using elicitations, as well, in instructional sequences to focus student attention on the strategic aspects of learning to use reading skills.

Categories for this coding scheme were primarily based on the work of Paris and his colleagues. Paris, Lipson & Wixson (1983) described the strategic reader as one who possesses and can consciously manipulate three kinds of knowledge about reading: declarative, procedural and conditional. Duffy and Roehler and their colleagues (Duffy & Roehler, et al., 1986c) found that teachers who were more effective explainers presented information expositorily that addressed all three types of cognitive knowledge as

curricular outcomes. Thus, these three kinds of knowledge appear highly interrelated in strategic reading and in strategic reading instruction (Duffy & Roehler, et al., 1986b). Paris and others (1983) observed that

> . . . conditional knowledge helps the agent orchestrate and to modulate declarative and procedural knowledge by fitting that information to particular tasks and contexts (cf. Flavell, 1978; Rogoff, 1982). With these three types of knowledge, a competent agent can select useful actions to attain specific goals. Furthermore, the agent can behave adaptively, can adjust actions recursively to fit changing conditions, and can manage available resource (i.e., ability and effort) efficiently. (p. 304)

These terms, as they apply to thinking about reading skills instruction, were defined in Chapter I. Briefly, declarative knowledge is knowledge about what the skill or strategy consists of: knowledge about what the task is, its important features and how it is structured (Brown, 1978). Procedural knowledge is information about <u>how</u> to successfully execute or apply reading skills or strategies to understanding text (e.g., how to use context to figure out word meanings; how to use visual clues, such out word meanings; how to use visual clues, such as commas and apostrophes, to interpret sentence meaning; and apostrophes, to interpret sentence meaning; or how to determine main ideas and important details for passage meaning). Conditional knowledge reflects understanding <u>when</u> to apply particular strategies and <u>why</u> their application is useful when reading.

Each type of cognitive knowledge is reflected in one of the sequence codes shown in Table 3.11. I included an

additional category to account for sequences in which the teacher's discourse focused less on communicating knowledge

Table 3.11

Cognitive Knowledge Type Sequence Codes

Code	Interpretation
A	Declarative Knowledge: Sequence discourse is focused on developing student understanding of what the skill task is, its characteristics, and how it is structured--either explicitly or implicitly by using skill with examples.
B	Procedural Knowledge: Sequence discourse is focused on developing student understanding of how to successfully use a skill or strategy.
C	Conditional Knowledge: Sequence discourse is focused on developing student awareness of when and why a particular skill or strategy would be used to better understand conditions for the skill's usefulness.
D	Task Procedure Knowledge: Sequence discourse is focused on developing student clarity of expectations about how to do the academic tasks assigned which are associated with the lesson (e.g., organize instructional materials; worksheets).
E	Other: Unrelated to developing student knowledge associated with lesson topic or task(s).

related to the skill topic and more on knowledge needed to follow directions and perform academic task activity procedures. Sequences which included content unrelated to accomplishing lesson content goals received a knowledge type coding of "Other". The example sequences presented in Appendix 3D.3 illustrate how this coding scheme was applied to the transcript data.

Code 5: Instructional Purpose Code: There is considerable lack of consensus in the reading research community on whether teachers' questioning behaviors in reading lessons provide instructional assistance to learners in acquiring competence in the use of reading skills or are useful merely as techniques for assessing student knowledge. A particularly lively recent exchange between Heap (1985, 1986) and Bereiter (1986) vividly illustrates the strong pro-assessment or pro-assistance positions held by those who are concerned about instructional roles for teacher questioning. The parameters of the "assessment vs. assistance debate" were discussed in Chapters I and II. A potentially limiting factor to the debate, however, has been viewing questioning in reading instruction in terms of that which occurs in the story-based comprehension lesson. Earlier I argued the need to examine questioning behaviors in the context of other kinds of reading lessons, such as the skill lesson, in order to expand the scope of discussion about how questioning instructionally functions. The development of this coding scheme represents an attempt to

devise a means of distinguishing questioning for assessment purposes from questioning for assistance purposes.

The sequence coding scheme described here, and shown in Table 3.12, represents how I documented the purposes of elicitations in skill lesson interaction sequences as either primarily assessment- or assistance-oriented. This scheme was applied to analyzing only those sequences which contained teacher elicitations of student responses in an interactive format. Sequences in which the teacher was the sole speaker presenting information expositorily were not included in this analysis.

To describe the instructional purposes of individual interaction sequences, twelve categories of assessment and assistance functions were developed and assigned a code number. Observations of recurring patterns in the lesson data were combined with criteria suggested by Heap (1982) to develop these code descriptions.

Eight of these categories were characterized by taking each of the major topical information content areas (i.e., skill information, example content, student prior knowledge, and academic task procedures/directions) and creating a code for whether sequence elicitations indicated teacher assessment of student knowledge about that content or teacher assistance in helping students manipulate that content successfully. I created an additional assessment code for sequences in which elicitations seemed to be serving the combined function of assessing both skill use in practice

Table 3.12

Instructional Purpose Codes
Based on the Perceived Function of Teachers' Elicitations
in Interaction Sequences

Code	Interpretation
1	Assessment of example content obtained by using skill
2	Assessment of strategic understanding of skill use
3	Combination of 1 and 2
4	Questioning provides assistance for correct answer-getting
5	Questioning in a perceived sequence provides assistance in student acquisition of skill strategy for performance
6	Assessment of experiential background knowledge of topical content information in examples
7	Assessment of experiential background knowledge of skill or strategy
8	Assistance in developing background knowledge for example topic
9	Assistance in developing background knowledge for skill or strategy
10	Assessment of knowledge of procedures/directions for lesson task completion
11	Assistance in acquiring knowledge of lesson task procedures/directions
12	Elicitations unrelated to lesson topic/task (e.g., behavior management, group management)

examples and procedural knowledge of skill information. Also, two additional assistance codes were applied to sequences in which the organizational arrangement of elicitations suggested that their primary purpose was to assist students either in correct answer-getting (regardless of content focus) or in developing a strategy-oriented self-questioning procedure for using the skill. A final category coded sequences in which teachers' elicitations were directed at student behavior management. The example sequences in Appendix 3D.3 have been organized to represent the kinds of sequences coded for each of these twelve categories .

Summary of Sequence Content and Purpose Coding

This section, describing how instructional sequences were identified and classified, presented the coding schemes developed to analyze sequence content and instructional function. Four coding schemes were used: (1) Sequence Topical Information Content; (2) Evaluation Information Content; (3) Cognitive Knowledge Type; and (4) Instructional Purpose. All identified instructional sequences in the analyzed skill lessons received codes for Sequence Topical Information Content and Knowledge Type. Additionally, teacher-student interaction sequences--i.e., those containing teacher elicitations, student responses and teacher evaluations, were coded for Evaluation Information Content and Instructional Purpose. Example sequences, selected from lessons taught by all teachers in the sample, were used to

illustrate how the coding schemes were applied to the lesson analysis.

Summary of Step Three: The Identification and Classification of Instructional Sequences.

Step Three analyzed the instructional sequences identified in the fifty-one skill lesson transcripts in terms of their structural form, content dimensions, and instructional function. Five coding schemes, developed and applied to the characterization of instructional sequences, were presented. This section detailed the procedures used to develop and implement these coding schemes. The coding schemes were the following.

(1) Sequence Structural Form examined the physical arrangement of teacher and student discourse elements in instructional sequences. Each sequence was classified as Teacher Monologue; Interactive Monologue; Simple Sequence; or Extended Sequence.

(2) Sequence Topical Information Content identified the topical focus of each sequence as it related to the lesson topic. The information content of each sequence was described as it related to student background and experiences, topics of practice examples, skill information, task procedures and directions, or content unrelated to the lesson topic.

(3) Evaluation Information Content classified the information focus of teachers' feedback remarks to student responses in interaction sequences into one of four categories: related to skill information; related to example content; related to task procedures; or not directly related to the elicited content of the student response. This coding scheme allowed for the examination of the content of evaluations in terms of their consistency with the topical foci of interaction sequences as communicated through teachers' elicitations.

(4) Cognitive Knowledge Type classified sequence content in terms of one of four knowledge areas, i.e., declarative, procedural, conditional or task procedures. This coding scheme made it possible to characterize discourse sequences in terms of the kinds of knowledge about reading skills being emphasized in instruction.

(5) Instructional Purpose applied only to teacher-student interaction sequences. This coding scheme permitted the classification of each interaction sequence into one of twelve categories of assessment or assistance function based on the perceived curricular intent of the teacher's elicitations in a given sequence.

Example sequences were presented in Appendix 3D.2 to illustrate the application of the structural form code, and in Appendix 3D.3 to illustrate how the remaining four coding schemes were jointly applied to characterize skill lesson instructional sequences. The examples broadly represented the instructional discourse of the twelve teachers in the sample. Additionally, the examples reflected recurring patterns of sequence-level teacher questioning practices observed across these lessons.

Step Four: Procedures for Transferring Coded Data to Lesson Maps

After the instructional sequence coding was complete, the coded information for each skill lesson was transferred from the reformatted transcript onto a lesson map. The map consisted of a tally grid organized by individual instructional sequences. I developed this means of consolidating coded lesson data according to procedures suggested by Bean (1985) for creating discussion maps. The mapping form is provided in Appendix 3E.

Use of a lesson map made it possible to systematically aggregate descriptive information about each instructional sequence and efficiently overview the contents of the entire lesson. The following procedures were followed for map construction.

Sequences were numerically ordered as they occurred within the lesson. These numbers were sequentially recorded on a mapping form. Up to seventeen sequences were recorded

on a single sheet. If the lesson sequences numbered greater than seventeen, multiple forms were used. To make it easier to visually identify lesson phases, a red line marked phase boundaries. Vertical categories identified the following recorded information for each sequence: (a) page numbers in the reformatted transcript; (b) sequence length in seconds (phase length was also noted); (c) lesson phase; (d) sequence topical information content; (e) sequence structural form; (f) kinds of elicitations; (g) kinds of evaluations provided to student responses; (h) evaluation content (recorded in the open column on far right of the map); (i) knowledge type; and (j) instructional purpose for interaction sequences. I recorded the latter two categories in the wide column between elicitations and evaluations because the map was developed and already in use prior to the decision to code sequences for this information. Elicitation and evaluation code information was recorded by numbering each element sequentially as it occurred in the sequence and placing this element-by-element positioning information in the appropriate box for that sequence.

A sample of a completed map is shown in Appendix 3B.2. The lesson map created by the grid effectively showed the positioning of sequence categorical data within lesson phases. Although sequence duration is recorded, the map does not sufficiently capture the temporal aspects of interactional flow in lessons from beginning to end. However, by plotting the lesson information in this way, particularly

sequence and discourse element codes described earlier in this chapter, it was possible to make lesson characteristics available for the profile analysis described in Step Five.

Step Five: Procedures for Constructing Visual Profiles of Lesson Discourse Characteristics.

In this step, I constructed visual profiles of each skill lesson, depicting discourse characteristics of principal (phase) and secondary (sequence) verbal lesson events and their sequential positioning within the lesson. The procedures for constructing these visual lesson characterizations were adapted from Erickson & Shultz's suggestions for depicting sequential and hierarchical relations among constituent parts of counseling interviews (Erickson & Shultz, 1982). Additionally, Mehan (1979a) used a variation of this model for generally characterizing the structure of classroom lessons.

Two modifications distinguished the profiles developed for this study. First, a major alteration involved developing structural profiles to reflect verbal discourse events only. Nonverbal information was generally unavailable because these lessons were not videotaped. Nevertheless, this method of analyzing the lesson data allowed teacher questioning practices to be viewed holistically within the framework of the integrated verbal interaction structure of the lesson (Mehan, 1979a). Second, the duration of lesson discourse events was reflected in the sequential record. Thus, these profiles made it possible to view coded

sequences within phases more dynamically in the lesson context as they temporally occurred. This was a dimension unavailable in the frequency analysis described in Step Six and available, but hidden, on the lesson maps described in Step Four.

Figure 3.2 displays the structural profile format developed for this study and designed to reflect lesson discourse components as they occurred sequentially and hierarchically. Lesson and sequence information available on the lesson maps (Step Four) was transferred onto this form. Lesson components are shown vertically. Secondary discourse units, sequences marked and characterized with code descriptions, were placed on the lower half of the form. Primary discourse units, phases marked and anecdotally described in terms of phase tasks and topics, were represented in the upper portion. top. The lesson event sequence, showing phase duration in real time and transcript line units, is displayed horizontally.

Appendix 3B.5 shows the lesson profile to accompany the transcript in Appendix 3B.1 for Lesson 18R4. Additionally, Appendix 3F displays twelve samples of visual profiles--one profile representative of each teacher's data set.

The profiles selected for this display reflect the "best" skill lesson taught by each teacher. I used lesson ratings from the parent study (Duffy & Roehler, et al., 1986c) as the basis for making a relative determination of lesson quality for each teacher. Those ratings consisted of

Profile of Skill Lesson Discourse Events

Date _____

Teacher _____ Lesson _____ Topic: _____

Time Recorded · = 1 minute

T = Teacher S = Student

I = Initiation R = Reply ∅ = Optional

Ev = Evaluation El = Elaboration

I. Entire Lesson

The Reading Periods Position of the Skill Lesson	Information obtained from observer field notes
	Structural Characteristics of Skill Lesson (Total Time = Minutes/Seconds)
Time	Each interval = 1 minute Phase Duration 0 5 10 15 20 25 30
Principal Lesson Phase	Lesson Phase Codes (Figure 3.3) (Boundaries marked in red)
Primary Discourse: Phase Tasks	Anecdotal Description of Lesson Events, per Phase; Focused on Teacher's Verbal Instructional Strategies
Transcript Lines	Total Counted Lines (per standard transcript form) per Phase
	0 5 10 15 20 25 30
Time	Sequence Duration
Secondary Discourse:	Sequence Topical Information Content Codes
Instructional Sequence Topics	
Transcript Lines	Total Counted Lines per Sequence

II. Secondary Discourse Features

Sequence Type	Knowledge Type Codes
Sequence Organization	Structural Form Codes
Sequence Purpose	Instructional Purpose Codes (sequences with elicitations)
Elicitations Purpose	Elicitation Content Purpose Codes
Verbal Participants	Teacher and/or Student(s)
Primary Verbal Roles	Teacher (Tell, Ask, Direct, Read) Student (Tell, Ask, Read)

FIGURE 3.2

Description of Visual Profile Contents

scores assigned for the explicitness of teachers' explanations and for students' awareness (for a description of how lessons were rated, see Duffy & Roehler, et al., 1986c). This criterion was only used in this study to select sample teacher profiles for display.

Step Six: Procedures for Quantifying Frequency Information Obtained from Coded Sequence Data

After the lesson maps were completed, frequencies and percentages were computed for all coded categories of analyzed elements at the lesson and phase levels. This section describes how frequencies and percentages, as well as additional descriptive measurements related to lesson and phase length and time, were obtained and recorded for the analyzed discourse elements in each lesson. The intent here was to obtain information about where discourse events were positioned in lessons, as well as information about their overall occurrence.

The categorical data were tallied for each phase and recorded by type on the appropriate lesson data summary form. Two kinds of frequencies were used in the analysis. Type frequencies were (a) summed across categories to yield total numbers of sequences, elicitations and evaluation elements for each lesson phase and (b) summed across phases to yield totals per category for the lesson. Phase frequencies were then used to compute the total number of sequences, elicitations, and evaluation elements in each skill lesson.

Several summary forms were used during this data analysis step, reflecting the refinement of recording procedures and the evolving nature of the analysis over time. In this sense, the quantification of coded data in this step proceeded in cycles.

The first cycle occurred when the full data set was treated using procedures developed during the pilot study. Those included tallying kinds of elicitations and evaluations, as well as sequence structural forms and content categories, for each lesson phase. The worksheet shown in Appendix 3G.1 was used to record the number of sequences per phase by structural form and informational content category. All identified types of elicitations were also tallied across sequences within each phase and recorded on the same form. Evaluation type tallies were recorded by phase on the worksheet shown in Appendix 3G.2. Total numbers of sequences, elicitations and evaluation elements per lesson were obtained during this cycle.

During the second analysis cycle, elicitation and evaluation categories were collapsed to more manageably focus on variables of interest. New forms were created to record the aggregated frequency information. Additionally, as new coding schemes were developed for evaluation information content, and sequence knowledge type and instructional purpose, forms were created to house that summary information. These forms recorded lesson phase frequencies for categories of interest within each coding scheme. Type

frequencies were figured for the overall lesson on these dimensions, also.

Category frequencies were converted to percentages of the total number of the particular discourse element represented in each coding scheme (i.e., elicitations, sequences or evaluation elements) for each phase. Also, the coded categories were figured as percentages of total elicitations and sequences per phase and for the lesson overall.

Additional descriptive information about the occurrence of elicitations in each lesson was obtained by computing lesson length and time measurements. For the overall lesson and each phase, the following were figured:

(1) percentage of teacher talk [transcript lines of teacher talk divided by total lesson discourse lines (Roehler, Duffy & Meloth, 1984)];

(2) lesson lines per sequence (LPS) and teacher talk Lines per sequence (LPS) [lines of lesson discourse divided by number of sequences];

(3) teacher elicitations per line of teacher talk (EPL) [elicitations divided by teacher talk lines].

(4) teacher elicitations (overall and by type per sequence (EPS) [number of elicitations divided by number of sequences];

(5) sequences per minute (SPM) [number of sequences divided by time in minutes].

The worksheets, shown in Appendices 3G.3 - 3G.11 were used to record complete lesson and phase data, frequencies and percentages, for each lesson. I designed these forms to house the data for all lessons analyzed per teacher as indicated by the five horizontal lines on each form. Form 3G.3 was used for each phase represented in a teacher's data set. For example, categorical information for the Introduction phase in each of a teacher's lessons was recorded on one worksheet; information for the Presentation phase on another; and so on. A phase data set of this kind was constructed for each teacher. Form 3G.4 recorded Instructional Purpose Codes and Knowledge Type Codes for all lessons in a data set on the left side. On the right, the phase of highest occurrence for each purpose and knowledge code were identified, and the percentage of lesson sequences noted. Forms 3G.5 and 3G.6 summarized these codes by lesson phase. Based on this information, the researcher judged whether the major focus for each phase was assessment or assistance. Form 3G.7 summarized elicitation totals for each lesson in a data set. Form 3G.8 recorded phase time and sequence information for each lesson.

Once the lesson and phase analyses were complete for each teacher, I began the third cycle of analyzing individual teacher data. The frequency data for each category were summed across all lessons in a data set. Weighted average frequencies and percentages were computed for each teacher because the number of lessons analyzed for all teachers was

not the same. Average lesson and phase length in transcript lines and real time were also figured. In this way, a description of a "typical" skill lesson was constructed for each teacher based on the averaged information.

Step Seven: Procedures for Characterizing The More Effective and Less Effective Teacher Groups

The purpose of this analysis step was to consolidate the data compiled for each teacher into summaries for the more effective and less effective teacher groups. Quantitative and qualitative characterizations of the skill lesson questioning practices of each teacher group were prepared.

Total frequencies and average lesson frequencies and percentages for each teacher were recorded on summary forms for their respective group. The forms described in Step Six (see Appendix G) were adapted for use as group summary records of lesson and phase data. Total frequencies (overall and by coded categories) were summed across the six teachers in the more effective group, and weighted means, standard deviations, and percentages were computed. The result was a characterization of the group occurrence of various lesson discourse elements--the "average" more effective teacher skill lesson. This procedure was repeated for the six teachers in the Less Effective teacher group.

The visual lesson profiles (see Step Five) and written observations about each teacher's questioning practices, which I recorded while reading and rereading transcripts,

were used to prepare descriptive lists of recurring discourse patterns found across the teachers in each group. During this analysis step, representative sequences were selected from lessons as examples of patterns characteristic of each group. The result was anecdotal evidence of questioning patterns that served as the basis for preparation of the qualitative findings in Chapter IV.

In summary, this analysis step prepared the data for the statistical and qualitative comparisons of questioning practices between the More Effective and Less Effective teacher groups described in Step Eight.

Step Eight: Procedures for Comparing Questioning Practices Between the Two Teacher Groups

The final step in the data analysis was the use of quantitative and qualitative procedures to compare the data compiled for the more effective and less effective teacher groups. From findings generated by this comparison, I was able to describe patterns of variation that supported characterizations of the role of teacher questioning in fifth grade, low group reading skill instruction.

As a basis for comparison of the two teacher groups, I used the following: (a) statistical tests for differences in the frequency data available for the twelve teachers in terms of total sequences, elicitations and evaluation elements and comparisons between group totals of various coded elements across lessons; and (b) the qualitative description of similarities and differences by appeal to phase level

findings and example instances of recurring interaction patterns observed in instructional interaction sequences.

Quantitative Analysis

Although the study was not designed or conducted as a rigorous statistical study, there were, nevertheless, certain statistical tests which could be performed on these data to examine the magnitude of differences between the more and less effective teacher groups. Given the relatively small sample size for tests of this kind, any significant differences obtained could only be considered suggestive of future directions to pursue with a larger sample.

Mann-Whitney U tests was used to test for differences between the two groups on overall frequency variables, including the following: lesson length (transcript lines and real time); number of sequences; number of elicitations; and number of evaluation elements. This test was used because of its greater power with smaller samples (Borg & Gall, 1979).

To examine whether the qualitative differences observed in the questioning behaviors might approach statistical significance, two-way, repeated measures analyses of variance (ANOVAs) were used to compare mean frequencies per lesson for coded variables between the two teacher groups. The coded variables compared were elicitation types, evaluation structural form and content, sequence topical information content, sequence structural form, and interaction sequence instructional purpose.

As will be discussed in Chapter IV, the results of these tests were informative and revealing regarding areas of potential differences between groups at the lesson level. Because of the small sample size by statistical standards, the Alpha Level for tests of significance was set at .05.

Qualitative Analysis

Frequency information available from the lesson phase analysis and information about the sequence and duration of lesson events shown in the visual profiles were used to construct qualitative descriptions of observed patterns similarities and differences between the more effective and less effective teacher groups. Phase and sequence examples were selected from the lesson transcripts to comparatively illustrate how teachers in each group conducted skill lesson interactions. Given the variety of skill topics contained in the sample of lessons, I selected these examples to be representative of interactions occurring in lessons of similar topical focus.

Summary of Data Analysis Procedures

This section detailed the procedures used to analyze the data collected from lesson transcripts. The analysis combined qualitative and quantitative methods. Eight steps were described and sequence examples provided where appropriate to illustrate how coding schemes were applied. The eight steps were the following: (1) identification and coding of elicitations within instruction sequences; (2) identification and coding of evaluation elements within

interaction sequences; (3) identification and coding of instructional sequences according to structural form, informational content and instructional purpose; (4) mapping coded sequence data for each lesson; (5) construction of visual lesson profiles; (6) quantification of coded sequence data using lesson and phase frequencies; (7) characterization of the average lessons for the more effective and less effective teacher groups; and (8) comparison of the average lessons quantitatively and qualitatively.

Summary of Chapter III

Design and Procedures

This chapter presented the research design (i.e., sample selection, data collection and data analysis procedures) used in this study of the role of teacher questioning in the reading skill instruction of twelve more and less effective fifth grade, low reading group teachers. Since teacher elicitations are not independent of the context in which they occur, the major analysis unit of interest was the instructional interaction sequence. Elicitations and evaluation components within sequences were also analyzed separately. These discourse elements were examined in terms of salient dimensions which, when viewed in combination, seemed able to provide better understanding of the role of questioning practices in lessons of this kind.

The sample of twelve teachers was obtained *post hoc* from the teachers in the 1982-83 Teacher Explanation Study

(Duffy & Roehler, et al, 1986c). The procedures used to determine effectiveness and obtain more and less effective teachers for the sample were described. Descriptions of the teachers and the fifty-one skill lessons analyzed were also provided.

Using socio-ethnographic and conversational discourse techniques, data were collected from the lesson transcripts using a four-step process. The process included: (1) elicitation identification; (2) reformatting the lesson transcripts; (3) lesson phase and sequence identification; and (4) determination of lesson, phase and sequence length. Definitions of lesson phases, elicitations and instructional sequences were clarified and illustrated.

The data analysis combined the use of quantitative and qualitative procedures in an eight-step process. This process included: (1) identification and coding of elicitations within instructional sequences; (2) identification and coding of evaluation elements within interaction sequences; (3) identification and coding of instructional sequences according to structural form, content and function; (4) mapping coded sequence data; (5) construction of visual lesson profiles; (6) quantification of coded sequence data in terms of lesson and phase frequency; (7) characterization of the more effective and less effective teacher groups; and (8) comparison of the teacher groups quantitatively and qualitatively using statistical tests and modified case descriptions. In this section, the development and

implementation of the coding schemes used to analyze sequences and discourse elements were described using sequences examples from lesson transcripts for support. The procedures for developing and constructing lesson maps and visual profiles were also described using map and profile samples from teacher data sets to illustrate.

CHAPTER IV

RESULTS

Introduction

The goal of this study was to broaden current understanding of the functional role of teacher questioning in reading instruction, specifically in lessons designed to teach reading skills. The study examined teacher questioning practices in fifty-one transcripts of low group skill lessons taught by twelve fifth grade teachers---six who were more effective and six who were less effective in promoting growth in students' reading achievement and metacognitive awareness of reading outcomes. Patterns of questioning behaviors were identified by analyzing instructional interaction sequences and their constituent discourse elements, i.e., teacher elicitations and evaluations of student response, on several dimensions. Content, form and function categories were developed to describe sequences and discourse elements. For each lesson, categories were analyzed in terms of frequency and positioning within the lesson structure. Lesson level findings were consolidated for each teacher group and compared. The use of qualitative and quantitative analysis procedures made it possible to describe how teachers' questioning behaviors appear to function during skill lessons to mediate student learning.

This chapter presents the major results of the study. Findings will be directly related to the research questions posed in Chapter I. Primarily, the study addressed the question, "What is the functional role of teacher questioning during reading skill instruction?" To do this, required specification of answers to a series of subordinate questions that looked within the lesson context and focused on characterizing similarities and differences between the two teacher groups in observable discourse features related to teachers' questioning practices. These three questions have been used to organize the presentation of results.

The findings are organized into four major sections. The first section comparatively reports the general length and frequency characteristics of skill lesson discourse related to Research Question 1. The second section reports the comparative findings related to Research Question 2, the lesson-level coding analyses of content and structural form dimensions of sequences and discourse elements. The third section reports the findings for Research Question 3's analysis of the positioning of coded interaction sequences and their primary teacher discourse elements--elicitations and evaluation elements, and comparatively describes these discourse elements relative to the structural and temporal context of the skill lesson. Finally, the fourth section summarizes the major patterns of results from previous sections to provide a broad characterization of the functional role of teacher questioning during reading skill instruction.

Research Question 1:
Overall Lesson Length and Discourse Component Characteristics

This section presents the findings related to the broadest level of description of teachers' elicitations and instructional interaction sequences in skill lessons. More specifically, it presents findings relevant to the first question asked, what are overall similarities and differences in the characteristics of instructional sequences that contain elicitations for more and less effective teachers of low reading groups?

Skill lesson length and general frequency of sequences and component discourse elements were analyzed to determine if differences between groups occurred at the global level. In addition, the total counts of discourse elements and time measures were needed for subsequent analyses. Instructional sequences, teacher elicitations and evaluation elements were viewed in terms of their overall occurrence in the skill lessons of the more and less effective teacher groups. Sequence and discourse element frequencies were considered relative to lesson length measured in transcript lines and in real time (minutes).

Table 4.1 presents a summary of general lesson characteristics, including the average lesson length in minutes and transcript lines, amount of teacher talk in transcript lines, and mean frequencies of sequence, elicitation and

TABLE 4.1

Average Lesson Means (and Standard Deviations) for Lesson Discourse Characteristics of the More and Less Effective Teacher Groups

Average Lesson	Lesson Length (Time: Minutes)	Lesson Length (Transcript Lines)	Teacher Talk (Transcript Lines)	Sequences (Frequency)	Elicitations (Frequency)	Evaluations (Frequency)
More Effective Teacher Group (N = 26)	26.73 (9.43)	377.42 (144.39)	250.92 (92.62)	34.88 (9.95)	134.15 (52.60)	111.58 (48.57
18 (L*=4)	28.63 (2.75	330.50 (56.25)	232.50 (42.00)	36.50 (26.7)	111.25 (10.37)	75.00 (7.26)
19 (L=5)	32.78 (9.59)	528.00 (149.58)	346.40 (82.68)	37.60 (14.04)	189.60 (59.77)	136.20 (55.30)
01 (L=4)	20.94 (8.68)	290.00 (141.90)	208.50 (88.40)	34.50 (10.95)	95.25 (44.04)	54.50 (28.92)
04 (L=4)	14.14 (4.33)	233.25 (74.01)	138.75 (45.27)	32.50 (8.66)	96.50 (41.77)	124.50 (46.10)
14 (L=5)	27.99 (7.67)	402.20 (120.84)	269.00 (79.98)	36.00 (14.40)	141.60 (39.18)	112.40 (34.28)
22 (L=4)	33.96 (6.85)	436.50 (107.99)	282.00 (78.18)	31.25 (6.29)	155.00 (43.26)	154.50 (45.59)
Less Effective Teacher Group (N=25)	22.05 (9.38)	258.44 (103.34)	172.00 (68.90)	35.48 (9.95)	93.32 (42.98)	73.96 (33.21)
11 (L*=5)	22.05 (9.38)	258.44 (103.34)	172.00 (68.90)	35.48 (9.95)	93.32 (42.98)	73.96 (33.21)
02 (L=4)	14.63 (6.87)	206.20 (106.12)	138.40 (62.96)	24.40 (6.53)	67.80 (37.31)	57.60 (33.67)
21 (L=3)	15.38 (10.03)	199.00 (76.02)	129.00 (51.26)	30.30 (3.51)	64.33 (15.57)	64.30 (16.74)
07 (L=5)	24.78 (7.89)	263.20 (100.44)	176.20 (58.61)	38.60 (11.39)	103.40 (43.58)	60.00 (27.10)
08 (L=5)	27.69 (9.53)	261.40 (95.70)	186.60 (74.24)	38.40 (8.50)	82.60 (35.78)	57.80 (23.80)
20 (L=3)	25.50 (7.80)	361.00 (37.73)	227.00 (36.72)	51.30 (13.00)	131.30 (26.34)	108.30 (7.57)
	p=.065	p=.065	p=.041*	p=.937	p=.132	p=.026*

*L = Lessons

evaluation elements for the six more and six less effective teachers, as well as for each teacher group.

As a check on whether overall differences between groups were large enough to be statistically significant, the nonparametric Mann-Whitney U test was used to test for differences between the two teacher groups on each lesson dimension. According to Hays (1973), this test is "a good and relatively powerful alternative to the usual t test for equality of means" (p. 778). Borg and Gall (1979) observed that the Mann-Whitney test is particularly useful with small samples because of its power. This test determined the equality of means between the two teacher groups by rank ordering the mean length and frequencies on each dimension for each teacher regardless of teacher group. From that ordering, the rank sum was computed for each group, followed by computation of the U statistic and significance level. Given the relatively small size of this sample for statistical comparison, the Alpha level was set at $p = .05$. The mean group ranks and results of the tests for significance are shown in Table 4.2.

Lesson Length

To create the context for examining questioning behaviors in the skill lessons of the more and less effective teachers, it was necessary to consider factors of lesson length and the amount of time teachers spent talking during the lesson. Two ways of measuring lesson length, described fully in Chapter III, were used--counts of

TABLE 4.2

Mann-Whitney U Test: Group $\bar{X}$ Ranks and Significance Levels for Tests of Differences in the Two Teacher Groups on Transcript Characteristics

	Lesson Length (Time)	Lesson Length (Trans. Lines)	Teacher Talk (Trans. Lines)	Total Sequences	Total Elicita-tions	Total Evalua-tions
More effective (n = 6)	8.42	8.50	8.67	6.42	8.17	8.83
Less effective (n = 6)	4.58	4.50	4.33	6.58	4.83	4.17
U-value	6.5	6.0	5.0	17.5	8.0	4.0
Significance level	p=.065	p=.065	p=.041*	p=.937	p=.132	p=.026*

*(p = .05)

transcript lines and records of lesson duration in real time units. Amount of teacher talk was measured by counting transcript lines. Thus, it was possible to compute the percentage of the lesson devoted to teacher talk relative to overall lesson line length. As will be shown, both provided useful perspectives for characterizing the overall lesson context.

While there was considerable variability in timed lesson length both across the fifty-one one lessons and for several individual teachers, the average more-effective teacher group lesson lasted 26.73 minutes compared to 22.05 minutes for average less-effective teacher group lesson. In terms of transcript length, the more effective teachers' lessons averaged 377.42 total lines and less effective teachers' lessons, 258.44 lines. These differences approached, but were not, statistically significant ($p = .065$ for both).

Average number of lines of teacher talk per lesson for the more and less effective teacher groups was 250.92 and 172.0, respectively. This difference was significant ($p = .041$). While predictably the average number of lines of teacher talk was greater for the more effective group, the percentage of the average lesson attributed to teacher talk, when divided by total transcript lines, was almost identical for the two groups--66.5 per cent for the more effective teachers versus 66.6 per cent for the less effective teachers.

Sequences

To provide additional insight relative to how teacher talk was distributed throughout the lesson, the transcript lines in each lesson were blocked into sequences following procedures advocated by Mehan (1979a). Lesson discourse tended to occur in identifiable and countable sequences of teacher talk (in the case of a monologue presentation of information) or teacher-student interaction. The latter were signalled typically by teacher initiation of the conversational topic, teacher elicitation of student verbal (and nonverbal) participation, students' responses, teacher reactions to those responses, and initiations of additional elicitations on the same topic (extended sequences) or initiations signalling a topic change (i.e., initiation of a new sequence). For this sample, Table 4.1 indicates that the mean number of sequences per lesson for the more effective teachers was 34.88, and 35.23 for the less effective teachers. This difference was not significant ($p = .937$).

The longer length of the more effective teachers' lessons does not appear to be accounted for by more sequences per lesson. Rather, it appears that teachers in this group engaged in longer interaction sequences with students as evidenced by calculating the mean number of lines of teacher talk per sequence. The more effective teachers averaged 10.8 lines per sequence (LPS) compared to 7.3 LPS for the less effective teachers. Sequences per minute during the

average lesson were 1.4 for the more effective teachers and 1.6 for the less effective teachers.

Elicitations

Table 4.1 shows that there was a high degree of variability in the frequency of elicitations in the lessons for both the more and less effective teacher groups. The total number of elicitations counted in twenty-six more effective teacher lessons was 3488, averaging 134.15 elicitations per lesson. This compares to 2333 elicitations in twenty-five less effective teacher lessons with an average of 93.32 elicitations per lesson. This difference was not significant ($p = .132$).

Elicitations per minute of lesson time averaged 5.31 for the more effective group and 4.23 for the less effective group. When elicitations were placed in the context of lesson sequences, the more effective teachers averaged 3.7 elicitations per sequence (EPS) compared to 2.7 EPS for the less effective teachers. Thus, the six more effective teachers showed a tendency to question more in their skill lessons, consistent with what would be predicted given longer lessons overall. When roughly figured as a percentage of sequence teacher talk (EPS divided by teacher talk LPS), teachers in both groups seemed to devote about one-third of their sequence discourse to elicitations.

Evaluations

The teacher's responses to students responses were represented as evaluation elements. These elements were

tallied if the teacher's response constituted positive or negative acknowledgement (simple evaluation statement), elaboration, or response with additional probes for information. Table 4.1 shows that the mean frequency per lesson of verbal teachers' evaluations of students' responses was 111.58 for the more effective teachers. The less effective teachers average 73.96 verbal evaluations per lesson. This difference was significant ($p = .026$).

This result indicates that the more effective teachers appeared to be more verbally responsive to students' responses in interaction sequences. This result should be viewed cautiously, however, given the possibilities that evaluations could also be given via non-verbal means even when no discourse was recorded. If this were true, it would appear that the less effective teachers used that technique more frequently than the more effective teachers.

Summary of Findings Related to Research Question 1

Taken together, these results begin to suggest patterns of similarities and differences in the skill lesson questioning behaviors of the more and less effective teachers. On the one hand, while the more effective teachers averaged longer skill lessons, teacher discourse dominated skill lessons for both groups at about the same rate relative to overall length. The general level frequency data portend possible differences in the questioning behaviors between the groups, however, when the fact that the average number of sequences per lesson was almost identical for both groups

despite longer lessons on the average by the more effective teachers. The general trends in the more effective teacher data toward more elicitations and evaluations per sequence combined with longer individual sequence length does not, however, provide sufficient information to characterize the nature of differences in questioning behaviors that may exist between the more and less effective teacher groups in the skill lesson as a whole and within interaction sequences particularly. For this reason it was important in this study to look beyond global frequencies to content, form and positioning characteristics of elicitations, evaluations and sequences.

Research Question 2: Content and Form Dimensions of Sequences and Discourse Components

The second major research question compared the sequences, elicitations and evaluations in the average lessons of the two teacher groups on several dimensions of content and structural form. To answer the components of this question, the coding schemes described in Chapter III were developed and applied to analyzing the transcript data. In this section, the results of these analyses are reported.

First, the identification and classification of elicitations into the major categorical types that emerged in the study as most prevalent in skill lessons will be described and compared for the two teacher groups. Included will be

consideration of elicitation frequency in lesson sequences overall. Second, a comparison of the overall occurrence of sequences classified by structural form within more and less effective teachers' skill lessons will be reported. Third, aspects of the overall topical information content foci of instructional sequences will be discussed and compared for the two groups by reporting the distribution of sequences according to content classifications. Fourth, the kinds of evaluation responses teachers provided in interaction sequences following student responses to their elicitations in terms of structural form and informational content focus will be described. Fifth, the cognitive knowledge types receiving focus in sequences in the average lesson for each teacher group will be compared. Sixth, interaction sequences in the average lessons for the two groups will be compared in terms of perceived instructional purpose, i.e., assistance and assessment.

The data were analyzed to test for differences using two-way repeated-measures analysis of variance (ANOVA) procedures with teacher group (more effective or less effective) as the independent variable and the categories for each dimension of elicitations, sequences or evaluation elements coded as the dependent variables. Separate analyses were conducted for each coded dimension. Tests for differences were performed for types of elicitations, sequence structural form, sequence topical information content, evaluation

information content, evaluation structural form, and interaction sequence instructional purpose. The Alpha level for these analyses was set at p = .05.

Kinds of Elicitations and Their Frequency in Lesson Sequences

Research Question 2 asked if there were differences in the kinds of elicitations (i.e., product, process, usefulness and academic task management) and frequency of those kinds employed in the lessons of the more and less effective teachers.

As described in Chapter III, elicitations in the skill lessons analyzed for this study were classified into one of several categories representing the primary kind of informational response the teacher sought from students. Four categories seemed to offer the most useful information to characterize differences in the elicitation content between more effective and less effective teachers in skill lessons. Those categories were labelled product elicitations, process elicitations, usefulness elicitations, and academic management elicitations (representing elicitations associated with the logistics of managing the doing of academic tasks and giving the directions for doing those tasks; not to be confused with "procedural knowledge" as that term was used to identify one of the knowledge foci of sequences). For this study, elicitations coded into other categories (see Figure 3.5) were grouped in the category called "Other".

The results of the ANOVA for elicitation type indicated strongly significant within subjects main effect differences ($F(4,40) = 45.29$, $p < .0001$). This finding reflects the predominance of product elicitations in teachers' discourse compared to the occurrence of process, usefulness and academic management elicitations. The ANOVA showed no significance for the between groups main effect ($F(1, 10) = 2.3$, $p = .158$) or interaction between group and elicitation type ($F(4, 40) = 1.26$, $p = .304$). The results reflect that while the mean product, process and usefulness elicitations for the more effective group were greater than those for the less effective group, these differences were not great enough to statistically distinguish the two groups.

Table 4.3 shows the overall distribution of lesson elicitations into the five categories. The mean frequencies, percentage of total elicitations, and elicitations per sequence for each category are reported for each teacher. For the more and less effective teacher groups, the total frequencies, the mean frequencies per lesson, standard deviations, percentage of total elicitations, and elicitations per sequence are reported.

Figures 4.1 and 4.2 visually depict the average lesson distribution of elicitation types as percentages of total elicitations for the two teacher groups. The results for product, process, usefulness and academic management elicitation types are described below.

TABLE 4.3

Types of Elicitations and Rate of Occurrence in the Skill Lesson Sequences of More and Less Effective Teachers (Average Overall Lesson for Each Group)

	Total Elicit	Total Seq.	EPS	Product F	Product %	Product EPS	Process F	Process %	Process EPS	Usefulness F	Usefulness %	Usefulness EPS	Procedural F	Procedural %	Procedural EPS	Other F	Other %	Other EPS	
More Effective Teacher																			
18	445	146	3.1	119	26.7	.8	50	11.2	.3	27	6.1	.2	84	18.9	.6	165	37.1	1.1	
01	381	139	2.7	167	43.8	1.2	10	2.6	.1	15	3.9	.1	72	18.9	.5	117	30.7	.8	
19	948	188	5.0	342	36.0	1.8	18	1.9	.1	14	1.5	.1	200	21.1	1.1	374	39.5	2.0	
14	708	180	3.9	251	35.5	1.4	97	13.7	.5	36	5.1	.2	146	20.6	.8	178	25.1	1.0	
22	620	125	4.96	196	31.6	1.6	41	6.6	.3	8	1.3	.1	132	21.3	1.1	243	39.2	1.9	
04	386	130	3.0	234	60.6	1.8	11	2.8	.1	5	1.3	.04	58	15.0	.5	78	20.2	.6	
Total group	3488	908		1309			227			105			692			1155			
$\bar{X}$	134.15	34.88	3.7	50.35	37.5	1.44	8.73	6.5	.25	3.85	3.0	.12	26.62	19.8	.8	44.42	33.1	1.3	(99.9)
S.D.	(52.6)	(9.95)		(20.77)			(11.2)			(4.21)			(16.1)			(24.92)			
Less Effective Teacher																			
07	517	193	2.7	206	39.9	1.1	13	2.5	.1	4	0.8	.02	182	35.2	.9	112	21.7	.6	
11	339	122	2.8	132	39.0	1.1	-	-	-	-	-	-	82	24.2	.7	125	36.9	1.0	
02	477	129	3.7	198	41.5	1.5	1	0.2	.01	4	0.8	.03	96	20.1	.7	178	37.3	1.4	
21	193	91	2.1	111	57.5	1.2	-	-	-	-	-	-	36	18.6	.1	46	23.8	.5	
08	413	192	2.2	113	27.4	.6	16	3.9	.1	5	1.2	.03	165	40.0	.9	114	24.9	.5	
20	394	154	2.6	152	37.0	1.0	5	.01	.03	-	-	-	129	33.0	.8	108	27.4	.7	
Total group	2333	881		912			35			13			690			683			
$\bar{X}$	93.32	35.24	2.7	36.48	39.1	1.0	1.4	1.5	.04	.52	0.5	.02	27.6	29.6	.8	27.32	29.3	.8	(100)
S.D.	(42.98)	(12.55)		(18.76)			(3.19)			(1.16)			(15.5)			(17.24)			

EPS = Elicitations per sequence

Significance Levels (MANOVA):

Between teacher groups - N.S. $F(1,10) = 2.33$, $p = .158$
Within group elicitation types - * $F(4,40) = 45.29$, $p < .0001$
Group x type interaction - N.S. $F(4,40) = 1.26$, $p = .304$

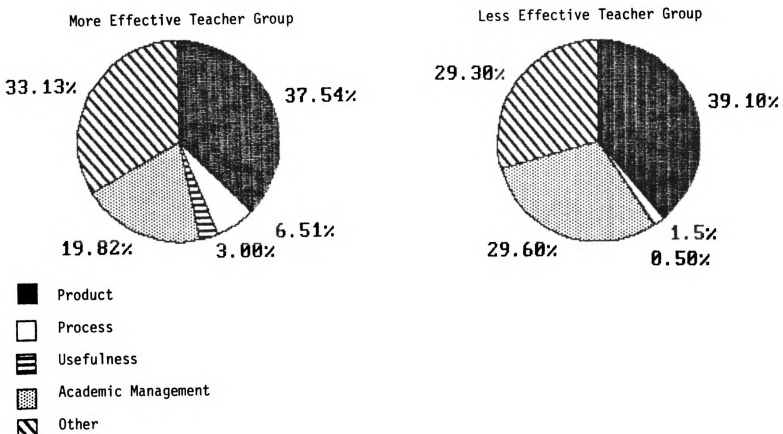


FIGURE 4.1

The More and Less Effective Teacher Groups' Average Lessons Characterized as Percentages of Elicitation Types (% of $\bar{X}$ Elicitations)

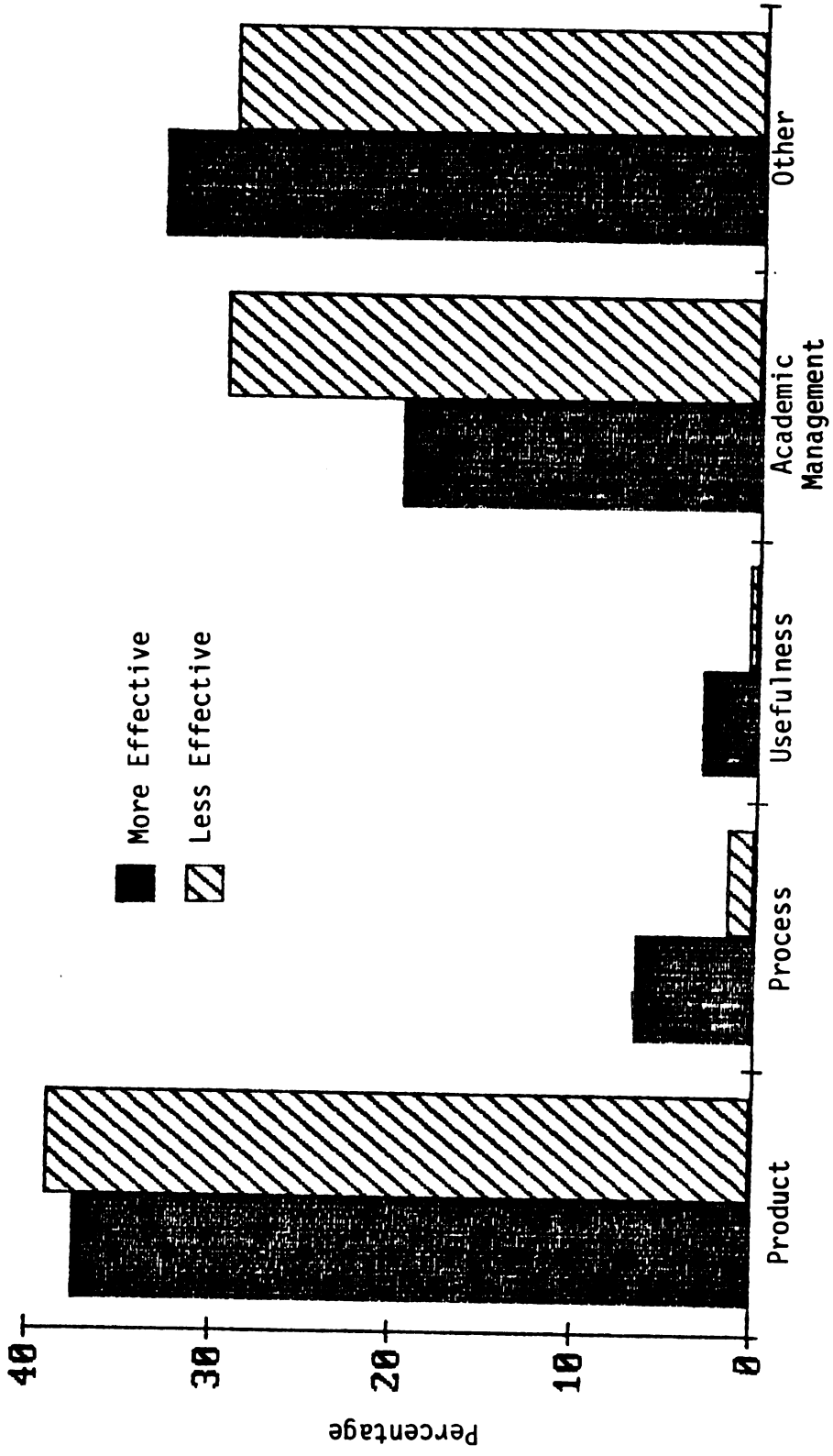


FIGURE 4.2

Comparison of Elicitation Types in the Average Skill Lessons of the More and Less Effective Teacher Groups

Product elicitations

While the overall classification of elicitation types showed a tendency on the part of the more effective teachers to include a greater variety of elicitations for student responses, the single type of elicitation most frequently posed by teachers in both groups was the skill content-coverage product question. Both groups posed large numbers of product-focused elicitations, with the more effective group posing an average of 50.35 compared to an average of 36.48 for the less effective group. The group percentages for product elicitations, however, were 37.5 per cent for the more effective group and 39.1 per cent for the less effective group, indicating similar lesson distribution for both groups.

While this kind of elicitation was clearly most prevalent in skill lessons, the qualitative analysis of sequences suggest potential differences in how product elicitations were combined with other types. Although not statistically significant, a potential trade off between the two teacher groups in terms of process and usefulness elicitations and academic management elicitations is suggested by the distributions shown in Figures 4.1 and 4.2. As will be described below, the more effective teachers intermixed product elicitations with a broader variety of other types in extended sequences. The transcript examination of lesson sequences showed numerous instances of more effective teachers posing a series of product elicitations

corresponding to the skill strategy steps they wanted students to use or eliciting a product response about an answer to a practice example and then asking students to explain how they obtained that answer. The less effective teachers showed few systematic patterns beyond the use of product elicitations in a recitation format to assess understanding of skill use in examples except as those might be combined with academic management elicitations in extended sequences. There were indications that these teachers placed some reliance on product elicitations in series of simple sequences to help establish activity flow during answer recitation. One pattern noted was the use of "telegraphing" product elicitations by using interrogative intonation with a student's name when doing practice examples that had a repetitive task format. The less effective teachers showed greater reliance on practice sheets more heavily as prompts throughout the lesson to elicit product responses.

Process elicitations

Mean process elicitations for the more effective teachers were 8.73 per lesson compared to a mean of 1.4 per lesson for the less effective teachers. Although the variability in the use of this kind of elicitation was large across the more effective teachers (shown in the standard deviation of 11.2), the more effective group elicited process information from students with greater regularity than the less effective teachers. Most of the process

elicitations recorded for the less effective group occurred in the lessons of two teachers as shown in Table 4.3. Process elicitations were documented in the lessons of all more effective teachers. The percentages of process elicitations relative to total lesson elicitations shows that this kind of elicitation was not a numerically prominent feature in the lessons of either group compared to product or academic management elicitations, however. 6.5 per cent of more effective teacher group's elicitations were process versus 1.4 per cent for the less effective group.

The qualitative analysis of the transcript data showed that the more effective teachers appeared to establish patterns for how they included process elicitations in conjunction with product elicitations within interaction sequences in their skill lessons. As will be described in the analysis of lesson phase data below, this kind of elicitation was often deployed during review phases interspersed with guided and recitation practice.

Usefulness elicitations

As shown in Table 4.3, the six more effective teachers asked students questions about when the skill in question would be useful in real text reading situations; the less effective teachers did not pose many of these questions in their lessons. The group means for usefulness elicitations were 3.85 for the more effective teachers and .52 for the less effective teachers. Sequences employing elicitations of this type were most evident in review phases of the more

effective teacher lessons, and they often took the form of extended discussions of reading situations in which skills could be used. Interestingly, when elicitations of this type were posed by the less effective teachers, they rarely allowed more than single word student responses or they asked students questions requiring yes/no answers about skill usefulness. While seemingly negligible in occurrence, the inclusion of this kind of elicitation by the more effective teachers created a pattern of differences between the two teacher groups.

Academic management elicitations

Although both groups of teachers showed decreases over the year in academic management elicitations, the more effective teachers consistently posed less of these compared to other elicitations within the lesson than did the less effective teachers. While the mean number of academic management elicitations was roughly equal for both groups--26.62 for the more effective group and 27.6 for the less effective group, the percentages of inclusion relative to other elicitations was lower for the more effective group (19.8 per cent) compared to the less effective group (27.6 per cent).

This finding may reflect the establishment of more efficient task management procedures by the more effective teachers, as well as the tendency of the less effective teachers to structure entire lessons around the format and content of workbook tasks requiring verbal directions.

The more effective teachers rarely presented a skill via a worksheet, introducing them later in lessons for guided and/or independent practice. Further, as noted in a previous report that examined relationships between questioning behaviors and student awareness (Vavrus & Meloth, 1984), it was not surprising that when correlations were obtained between student awareness ratings and types of elicitations, procedural elicitations were negatively correlated with student awareness (-.40, $p < .05$).

Sequence Structural Form

Research Question 2 asked if there were differences in the structural forms of instructional sequences, particularly those containing elicitations. Results of the ANOVA for sequence form showed no significant between groups main effect difference in terms of sequence structural forms employed in skill lessons ($F(1, 10) = 2.158$, $p = .173$). Nor was there a significant Group by Sequence Form interaction ($F(2, 20) = .671$, $p = .522$). There was, however, a strongly significant within group main effect indicated for categories of sequence form ($F(2, 20) = 12.131$, $p = .0004$). The means, standard deviations, and percentages of sequence form types are shown in Table 4.4a.

Although overall mean differences between groups were slight and not statistically significant, there were some noticeable variations in the percentages of sequence form distribution in average group lessons, illustrated in

TABLE 4.4a

Means (and Standard Deviations) and Percentages of Sequence Structural Form Categories in the Average Lessons of the More and Less Effective Teacher Groups

Teacher Group	Teacher Monologue		Interactive Monologue		Simple Sequence		Extended Sequence		X Total Sequence
	X (SD)	%	X (SD)	%	X (SD)	%	X (SD)	%	
More effective L=26; S=908	3.50 (1.66)	10.0	4.5 (3.1)	12.9	8.23 (5.05)	23.6	18.69 (7.08)	53.5	34.88 (9.95)
Less effective L=25; S=881	2.64 (1.8)	7.5	5.24 (5.19)	14.9	12.68 (7.94)	35.9	14.68 (7.89)	41.7	35.48 (12.28)

L = lessons
S = sequences

Significance level:

Between groups - N.S. $F(1,10) = 2.158$, $p = .173$
Within group - * $F(2,20) = 12.131$, $p = .0004$
Group x form - N.S. $F(2,20) = .671$, $p = .522$

TABLE 4.4b

Breakdown of Extended Sequence Form by Response Acceptability and Number of Student Participants

Teacher Group	Accepted Same Students		Accepted Different Students		Incorrect Same Students		Incorrect Different Students		Total Accepted		Total Incorrect		Total Same		Total Different	
	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄	%	X̄	%	X̄	%	X̄	%
More effective L=26; S=908	4.85 (4.6)	13.9	5.96 (4.36)	17.1	2.54 (2.83)	7.3	5.35 (3.14)	15.3	10.8	57.8	7.9	42.2	7.4	39.5	11.3	60.5
Less effective L=25; S=881	2.88 (3.56)	8.2	3.48 (2.55)	9.9	2.6 (3.28)	7.4	5.72 (4.62)	16.2	6.36	43.3	8.32	56.7	5.48	37.3	9.2	62.7

% = % of total sequences in average lesson

% = % of extended sequences

L = lessons
S = sequences

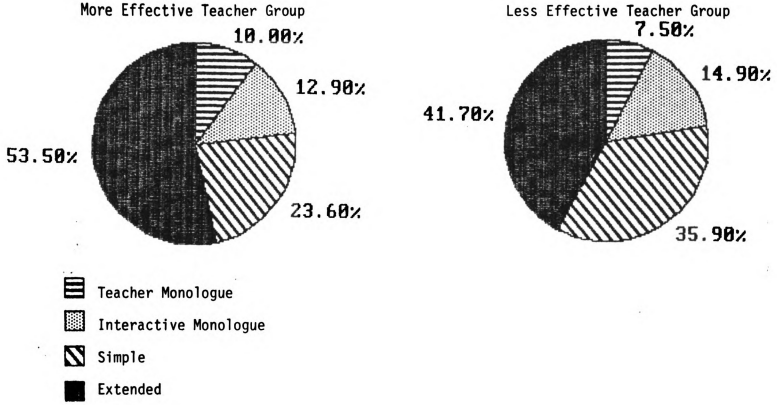


FIGURE 4.3

The More and Less Effective Teacher Groups' Average Lessons Characterized as Percentages of Sequence Structural Form (% of $\bar{X}$ Total Sequences)

Figures 4.3, which may suggest patterns in how teachers in the two groups structured interaction sequences. It is interesting that the more effective teacher group showed greater use of extended sequences (53.5 per cent vs. 41.7 per cent for the less effective group), while the less effective teacher group's average lesson contained higher use of simple sequences (35.9 per cent vs. 23.6 per cent for the more effective group). There was also an indication of more monologue sequences in the lessons of the more effective teachers. Although the percentage difference was slight, the qualitative analysis of lesson sequences showed that the more effective teachers' monologues were different--often longer and more explicitly focused on skill content than those of the less effective teachers. Figure 4.4 visually depicts the possible trade-off between groups in kind of teacher-student interaction sequence favored relative to the kind of monologue preferred.

This pattern lends support to the finding reported earlier indicating that despite longer lessons overall, the sequence rate per lesson for the more effective group was roughly equal to that of the less effective teacher group. When this pattern is considered relative to elicitation types and sequence topical information content, it may be possible to infer that the more effective teachers had more information available from which to extend interactions with students on the basis of having presented skill information in the form of a monologue explanation earlier in the

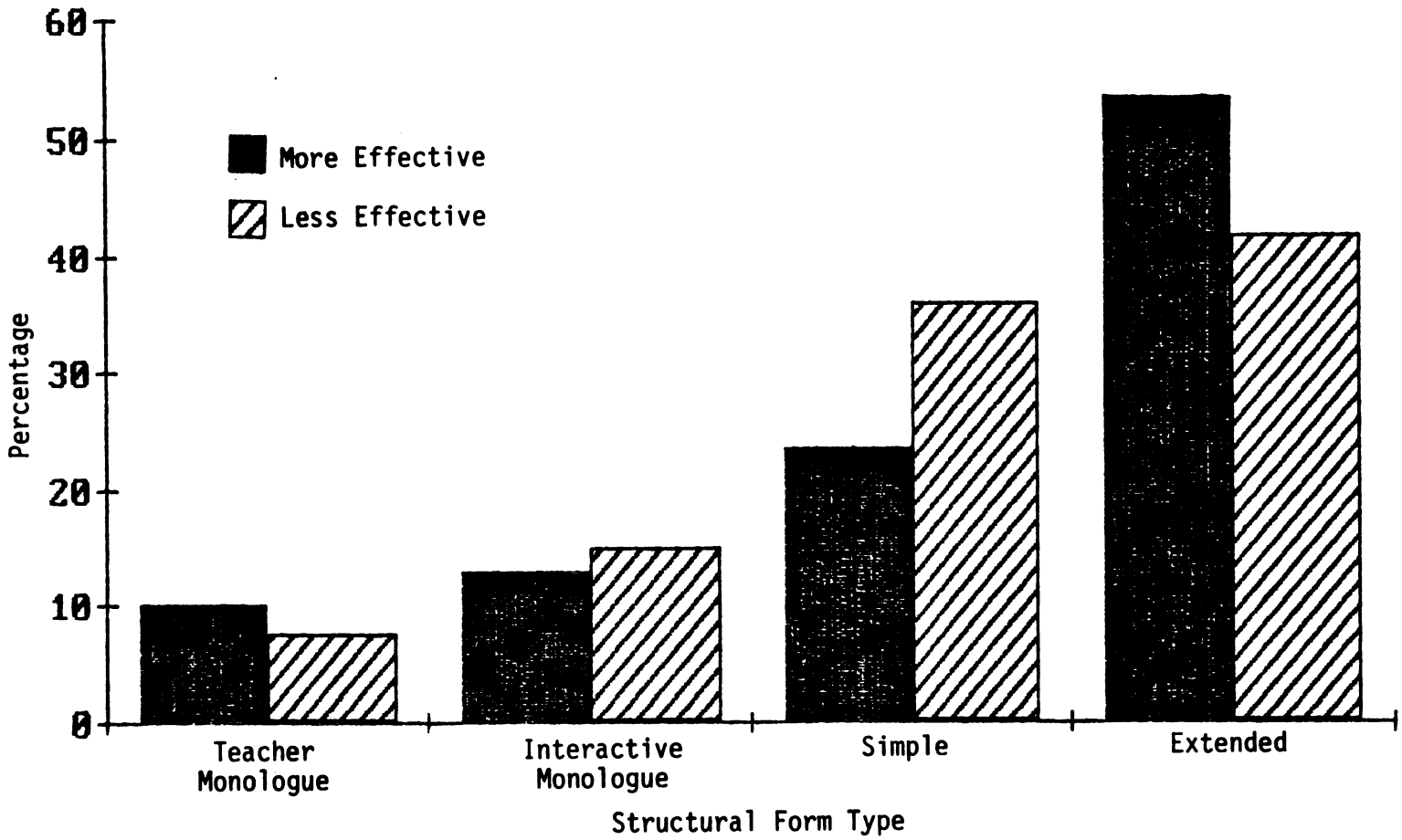


FIGURE 4.4

Comparison of Structural Form Types in the Average Lessons of the More and Less Effective Teacher Groups

lesson. This suggestion will be explored further in the section reporting the results of Research Question 3 concerning lesson positioning of discourse elements.

A second potential pattern shown by additional analyses of the extended sequence data is show in Table 4.4b. As described in Chapter III, extended sequences were coded based on two additional dimensions--response acceptability as grounds for the teacher's extension of the sequence and the number of student participants asked to respond to elicitations during the sequence. Table 4.4b reports the mean sequences and percentages for these subcategories. Figure 4.5 suggests possible interactive effects between teacher group and response conditions for sequence extension regardless of numbers of students participating in an interaction sequence.

Although a very slight trade-off was observed, both teacher groups appeared similar in terms of whether they maintained interactive involvement with a single student or multiple student participants during the lesson. The percentages of sequences extended with the same student were 39.5 per cent for the more effective group and 37.3 per cent for the less effective group. 60.5 per cent of the extended sequences for the more effective group involved multiple student participants versus 62.7 per cent for the less effective group.

Regarding response acceptability as grounds for sequence extension, the patterns for the two groups was

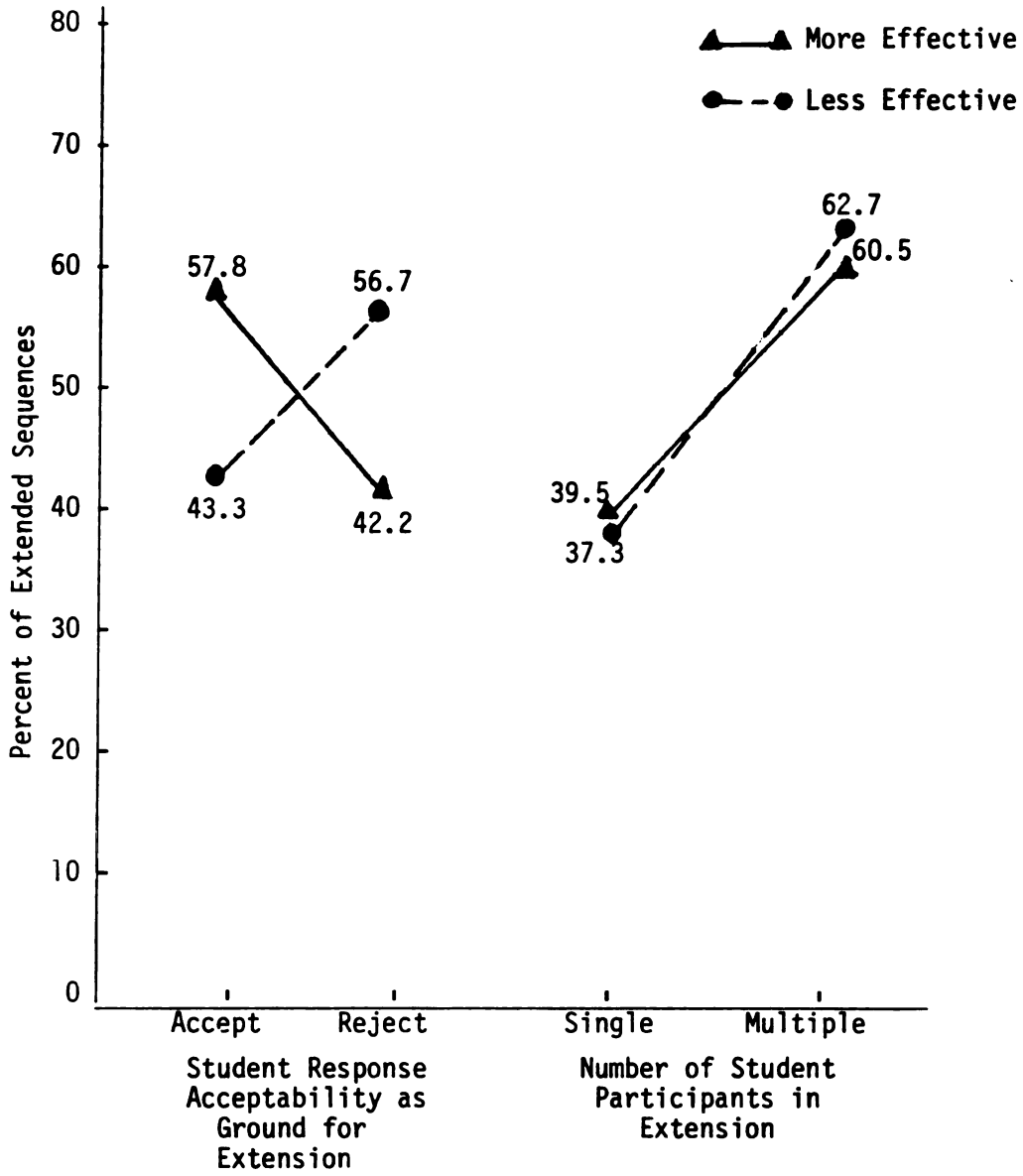


FIGURE 4.5

Conditions of Sequence Extension in More and Less Effective Teacher Groups' Average Lesson

almost directly reversed: the more effective group extended 57.8 per cent of lesson sequences following a correct or acceptable student response and 42.2 per cent following an incorrect or unacceptable response; the less effective group extended 43.3 per cent of lesson sequences following a correct or acceptable response and 56.7 per cent following an incorrect or unacceptable response. This finding supports differences noted in the qualitative sequence analysis in the prompting strategies used by teachers in the more and less effective groups when engaged in longer interactions with students. This aspect of extended sequences warrants future investigation.

Sequence Topical Information Content

Research Question 2 asked if there were differences in the informational or topical content foci of instructional sequences as communicated through sequence elicitations. The means, standard deviations and percentages of total sequences for topical information content are shown in Table 4.5.

The results of the ANOVA indicated no significant between groups main effect differences regarding sequence topical information content ($F(1, 10) = .159$, $p = .699$). Again, there was a strong within subjects main effect for categories of topical content ($F(5, 50) = 48.317$, $p < .0001$). Skill lesson instructional sequences for both groups were primarily focused on allowing students to demonstrate use of skills through practice examples as seen in

TABLE 4.5

Means (and Standard Deviations) for Sequence Topical Information Content Categories in the Average Lessons of the More and Less Effective Teacher Groups

Teacher Group	Student Experience		Skill Information		Use in Examples		Academic Task Management		Student Behavior		Prior Story Content	
	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%
More effective	.87 (1.07)	2.5	10.44 (5.73)	29.9	16.65 (8.48)	47.7	6.62 (4.4)	18.9	.23 (.51)	0.6	.12 (.33)	0.3
Less effective	.88 (1.81)	2.5	5.48 (5.3)	15.6	17.52 (11.22)	49.7	10.32 (4.85)	29.3	.76 (1.27)	2.1	.28 (.84)	0.8

Significance Levels:

Between groups - N.S. $F(1,10) = 1.59$, $p = .699$
Within categories - * $F(5,50) = 48.317$, $p < .0001$
Group x categories interaction - N.S. $F(5,50) = 1.939$, $p = .104$

both mean sequences (more effective = 16.65 sequences, and less effective = 17.52 sequences) and percentages of total sequences (more effective = 47.7 per cent, and less effective = 49.7 per cent). The second major topical focus was academic task management closely followed by skill information.

There was, however, an interesting difference observed between groups in emphasis place on either academic management or skill information as sequence topics. The average skill lesson for the more effective teacher group contained 10.44 sequences focused on skill information (29.9 per cent of total sequences) and 6.62 sequences focused on academic task management (18.9 per cent of total sequences). For the less effective teacher group the emphasis was the opposite--5.48 sequences focused on skill information (15.6 per cent of total sequences) and 10.32 sequences focused on academic task management (29.3 per cent of total sequences). This shift in sequence emphases is shown in the comparison of average lessons' composition in Figure 4.6.

The results of the ANOVA suggest a possible trend toward significant differences in the Group x Sequence content interaction effect ($F(5, 50) = 1.939$, $p = .104$). The groups' perceived trade-off in sequence focus between skill information and academic management is illustrated in Figure 4.7. This finding is consistent with other patterns in the findings, such as those for elicitation types. Further, this finding tentatively suggests that beyond allowing

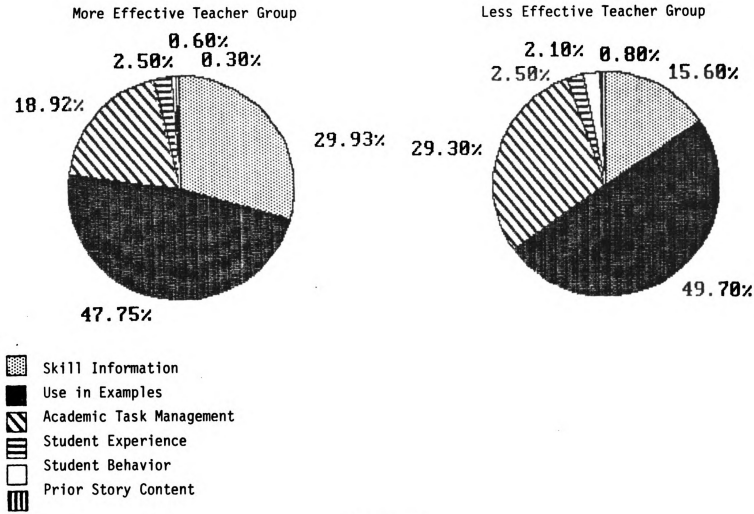


FIGURE 4.6

The More and Less Effective Teacher Groups' Average Lessons Characterized as Percentages of Sequence Topical Information Content

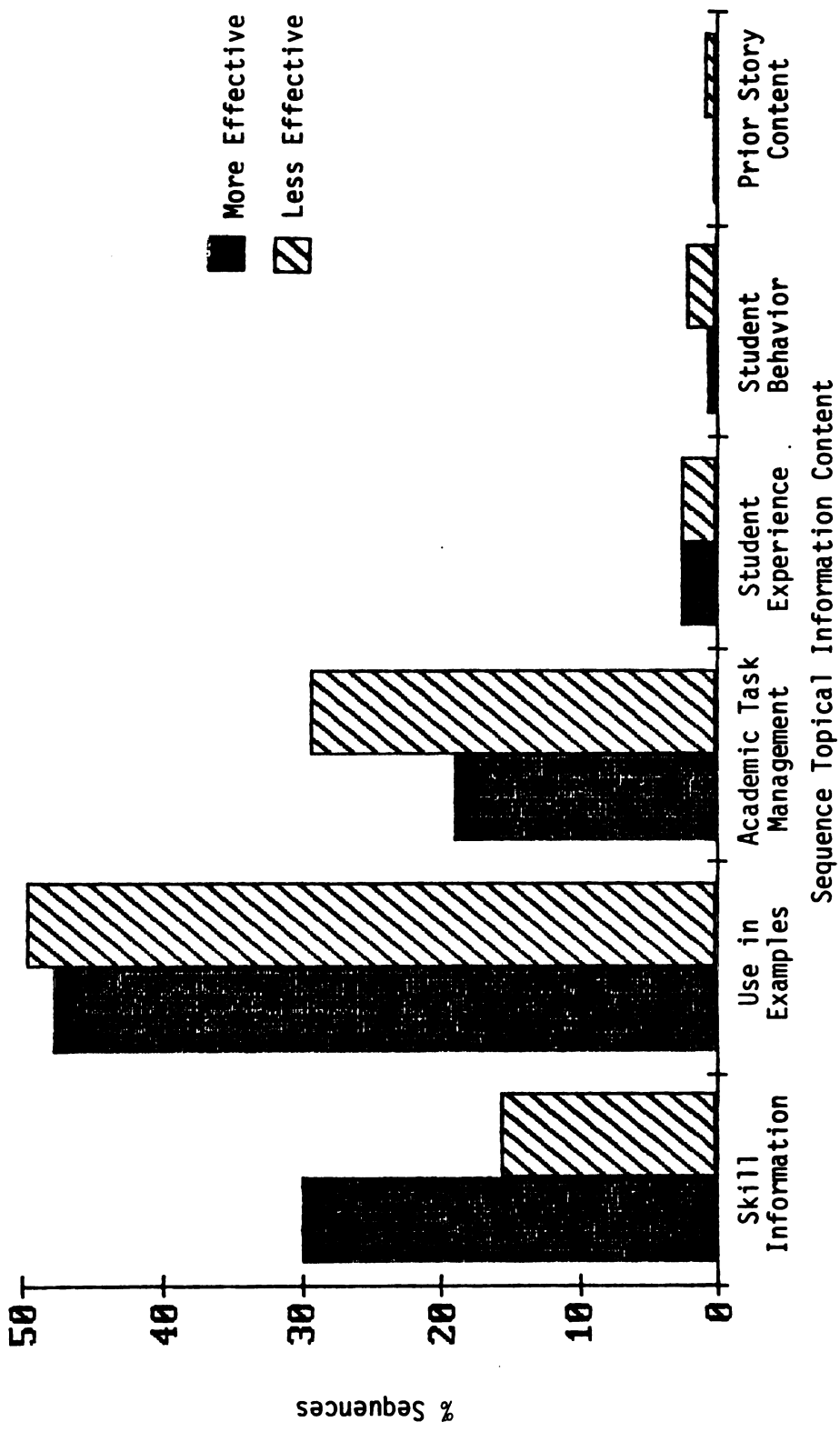


FIGURE 4.7

Comparison of Sequence Topical Information Content in the Average Skill Lessons of the More and Less Effective Teacher Groups

students ample opportunities to practice skills in examples, the topical information content focus of skill lessons for the more and less effective teacher groups was different.

Evaluation Structural Form and Informational Content

Research Question 2 asked if there were differences in the kinds of evaluation and/or elaboration responses teachers provided to student responses in terms of informational content and structural form. The purpose of focusing separately on the evaluation component of interaction sequences was to determine if teachers maintained the topical focus established in sequences through elicitations when they responded to students' responses to those elicitations. Also of interest was the discourse means used to provide feedback to student responses--simple statements versus elaborated statements versus elicitation probes. This information would assist in filling out the overall characterization of teacher discourse in interaction sequences by focusing on how teachers followed through in elicited interactions. This section describes the findings related to teachers' evaluation information content in interaction sequences and evaluation structural form.

Evaluation Information Content

Table 4.6 shows the means, standard deviations, and percentages of sequences with different information content foci reflected in the evaluation components. The results of the ANOVA showed a significant within subjects main effect

TABLE 4.6

Means (and Standard Deviations) and Percentage of Sequence Evaluation Content Categories in the Average Lessons of the More and Less Effective Teacher Groups

Teacher Group	Skill Information		Example Content		Task Procedures		Other	
	$\bar{X}$(SD)	%	$\bar{X}$(SD)	%	$\bar{X}$(SD)	%	$\bar{X}$(SD)	%
More effective $\bar{X}S$ = 34.88	11.71 (6.07)	33.5	13.37 (8.44)	38.3	3.27 (3.63)	9.4	1.15 (1.67)	3.3
Less Effective $\bar{X}S$ = 35.48	4.88 (5.01)	13.8	15.92 (11.69)	45.2	6.56 (4.42)	18.6	1.6 (1.89)	4.5

Significance Levels:

Between groups - N.S. $F(1,10) = .535$, $p = .481$
Within categories - * ($F(3,30) = 15.515$, $p = .0003$
Group x category interaction - N.S. $F(3,30) = 2.328$, $p = .095$

$\bar{X}s$ = mean sequence

for content categories ($F(3, 30) = 15.515$, $p = .0003$), but no main effect difference between groups ($F(1, 10) = .535$, $p = .481$). A Group x Evaluation content interaction effect was suggested but did not reach significance ($F(3, 30) = 2.328$, $p = .095$). Figure 4.8 suggests that the source of this interaction trend was differences between the two groups in the provision of skill-focused feedback. The more effective teacher group's evaluations (33.5 per cent) were focused in this area compared to 13.8 per cent for less effective teacher group.

Figure 4.9 compares the informational content focus of sequences overall to evaluations for the two teacher groups. The distribution of evaluations focused on skill information and example content suggests more balanced treatment in the more effective group's lessons compared to an example content focus in the less effective group's lessons.

Evaluation Structural Form

Table 4.7 shows the means, standard deviations and percentages of evaluations in terms of the evaluation structural forms used to provide feedback to student responses. The percentages in the three categories--simple statement, elaboration and elicitation, suggest that teachers in both groups provided roughly similar proportions of feedback in these formats to student responses. The mean number of evaluations in each category was, however, consistently much higher for the more effective teacher group. The results of the ANOVA for evaluation

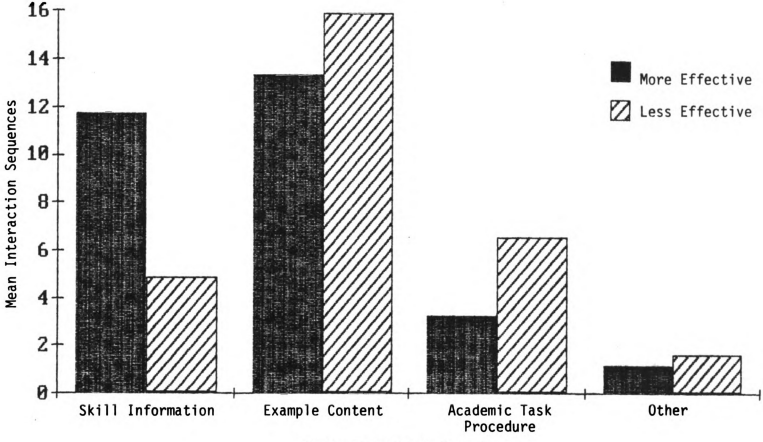


FIGURE 4.8

Comparison of Evaluation Topical Content in the Average Skill Lessons of the More and Less Effective Teacher Groups

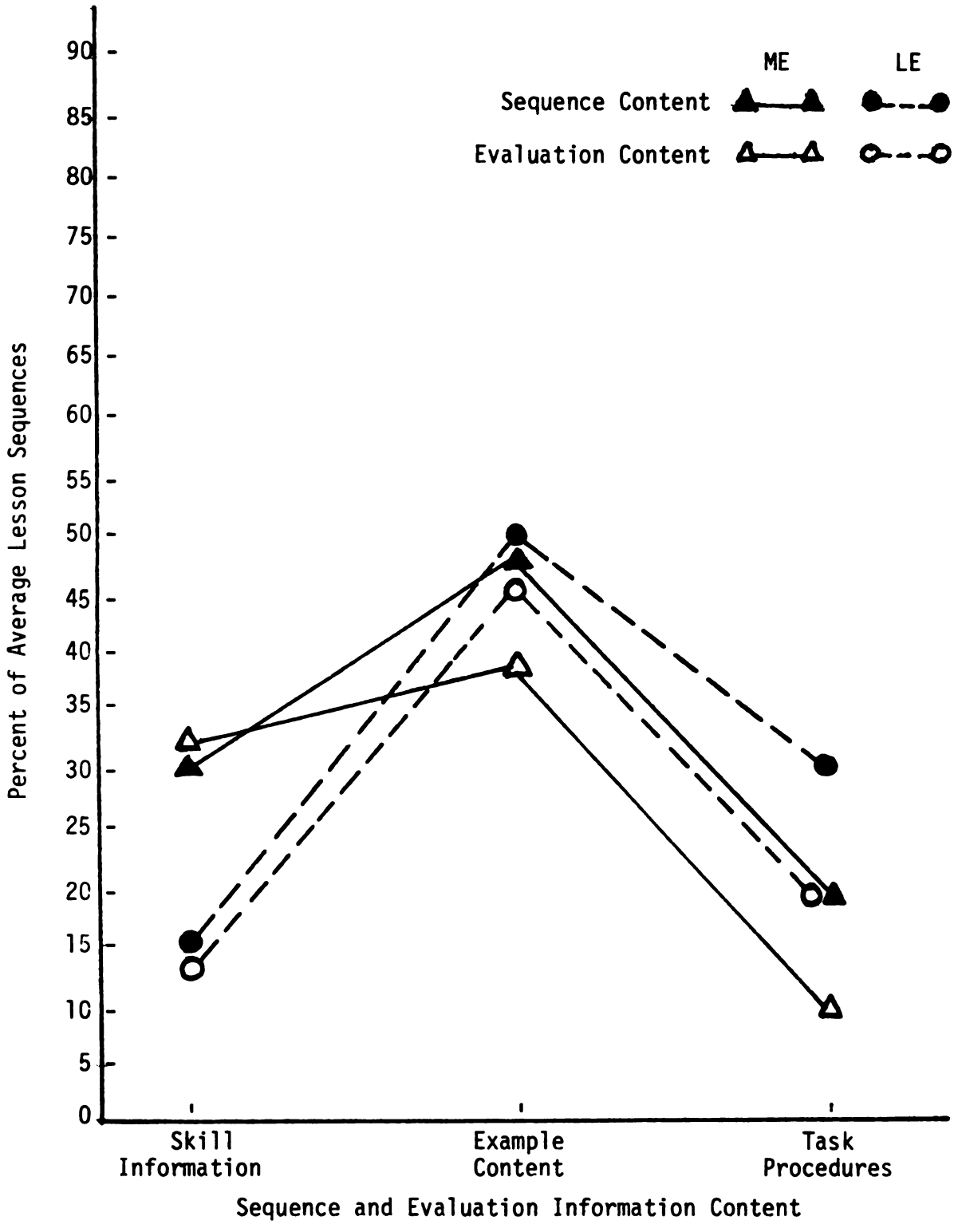


FIGURE 4.9

A Comparison of the Evaluation Content of the More and Less Effective Teacher Groups' Average Lessons

TABLE 4.7

Means (and Standard Deviations) and Percentages of Evaluation Forms for Interaction Sequences in the Average Lessons of the More and Less Effective Teacher Groups

	Simple		Elaboration		Elicitation	
Teacher Group	$\bar{X}$(SD)	%	$\bar{X}$(SD)	%	$\bar{X}$(SD)	%
More effective	40.0	35.8	27.0	24.2	36.62	32.8
$\bar{X}E$ = 111.58	(15.41)		(11.7)		(28.3)	
Less effective	27.6	37.3	17.52	23.7	24.08	32.6
$\bar{X}E$ = 73.96	(14.65)		(9.01)		(16.53)	

Significance Levels:

Between groups - N.S. ($F(1,10) = 3.445$, $p = .093$)
Within categories - * $F(2,20) = 3.541$, $p = .048$
Group x category interaction - N.S.

$\bar{X}E$ = mean elicitations

content indicated a significant main effect for within subjects categorical differences ($F(2, 20) = 3.541$, $p = .048$), and a strong trend toward a between groups main effect ($F(1, 10) = 3.445$, $p = .093$). Figure 4.10 shows this trend.

These results suggest that the teachers in both groups responded in similar structural ways to student responses in general. The trend toward main effect differences between groups may reflect the larger number of extended interaction sequences recorded for the more effective teacher group which would have allowed greater opportunities for evaluation of student responses. The content analysis indicates, however, that what teachers chose to focus on in the feedback they provided differed depending on whether they were in the more effective or less effective group. Students of teachers in the more effective group received more verbal feedback focusing on skill information, while students of less effective teachers received more feedback focused on practice example content and task procedures. Figure 4.11 visually compares the average lessons' characteristics of the teachers' evaluations to student responses.

Cognitive Knowledge Type

Research Question 2 asked if there were differences in the types of knowledge (i.e., declarative, process, procedural, conditional or task procedural) focused upon in

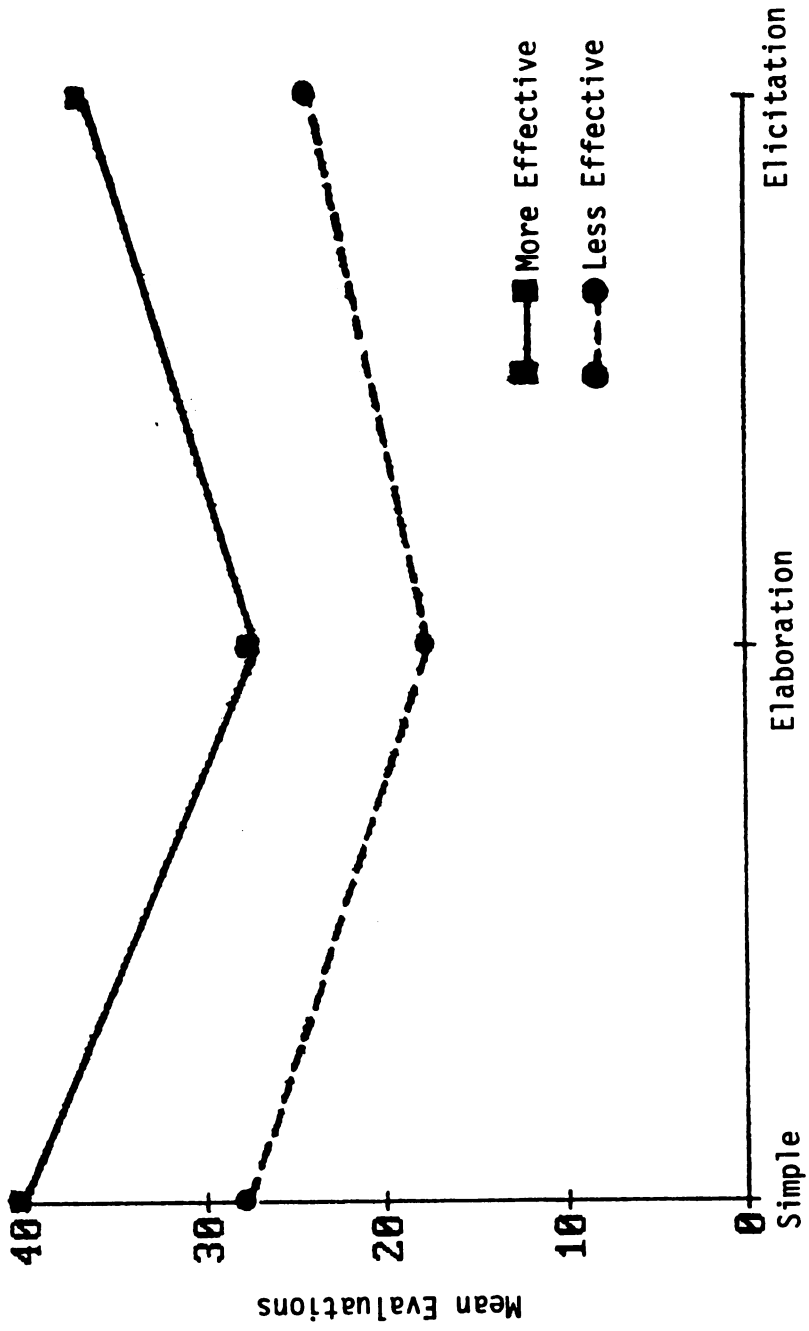


FIGURE 4.10

Comparison of Mean Number of Evaluation Structural Forms for the More and Less Effective Teacher Groups' Average Lessons

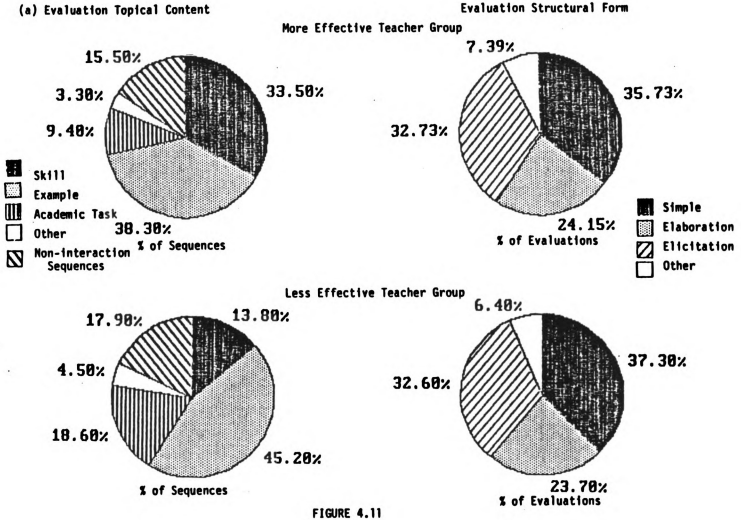


FIGURE 4.11

The More and Less Effective Teacher Groups' Average Lessons Characterized as Evaluation Elements: (a) Evaluation Topical Content (% of $\bar{X}$ Sequences) and (b) Evaluation Structural Form (% of $\bar{X}$ Evaluations)

instructional sequences. The means, standard deviations and percentages of total sequences are shown in Table 4.8.

The results suggest that the more effective teachers' students appeared to acquire more broadly-based knowledge about reading skills than those of the less effective teachers. Figures 4.12 and 4.13 displays the differences in the lesson balance of cognitive knowledge types.

While the percentages of lesson sequences for both teacher groups showed the predominant lesson focus on declarative skill knowledge (50.4 per cent for the more effective group and 63.7 per cent for the less effective group), the more effective group balanced this with 20.0 per cent of sequences focused on procedural knowledge and 5.6 per cent focused on conditional knowledge. The less effective teachers focused minimally on these two other knowledge areas in their treatment of reading skills (1.4 per cent and 0.6 per cent, respectively). There was more focus on the knowledge needed to complete tasks by the less effective teachers (30.9 per cent of lesson sequences compared to 21.3 per cent for the more effective teacher group). These differences are in keeping with the previous reported patterns suggesting that teachers in the more effective group provided skill instruction with more depth of coverage.

The similarities in profiles between the cognitive knowledge type focus of sequences (Figure 4.13) and elicitation types (Figure 4.2) suggest important relationships

TABLE 4.8

Means (and Standard Deviations) and Percentages of Sequences for Knowledge Type Foci in the Average Lessons of the More and Less Effective Teacher Groups

Teacher Group	Declarative		Procedural		Conditional		Academic Task		Unrelated	
	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%
More effective	17.62 (8.1)	50.4	7.0 (6.32)	20.0	1.96 (1.97)	5.6	7.42 (4.75)	21.3	.92 (1.32)	2.7
Less Effective	22.44 (11.55)	63.7	.48 (1.42)	1.4	.2 (0.5)	0.6	10.92 (4.56)	30.9	1.2 (1.5)	3.4

Significance levels unavailable

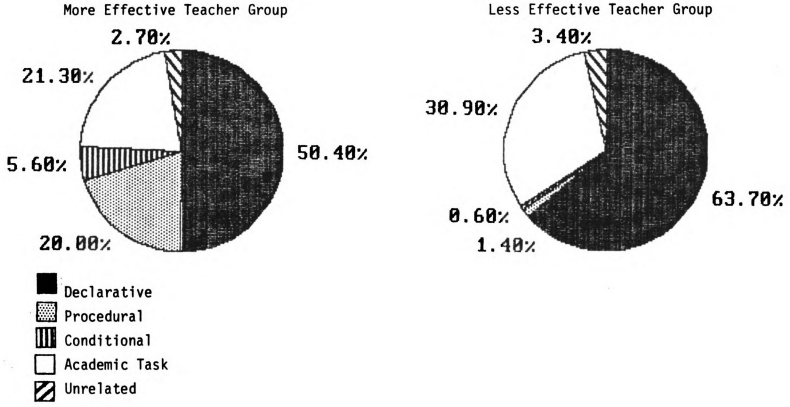


FIGURE 4.12

The More and Less Effective Teacher Groups' Average Lessons Characterized by Cognitive Knowledge Types (% of $\bar{X}$ Sequences)

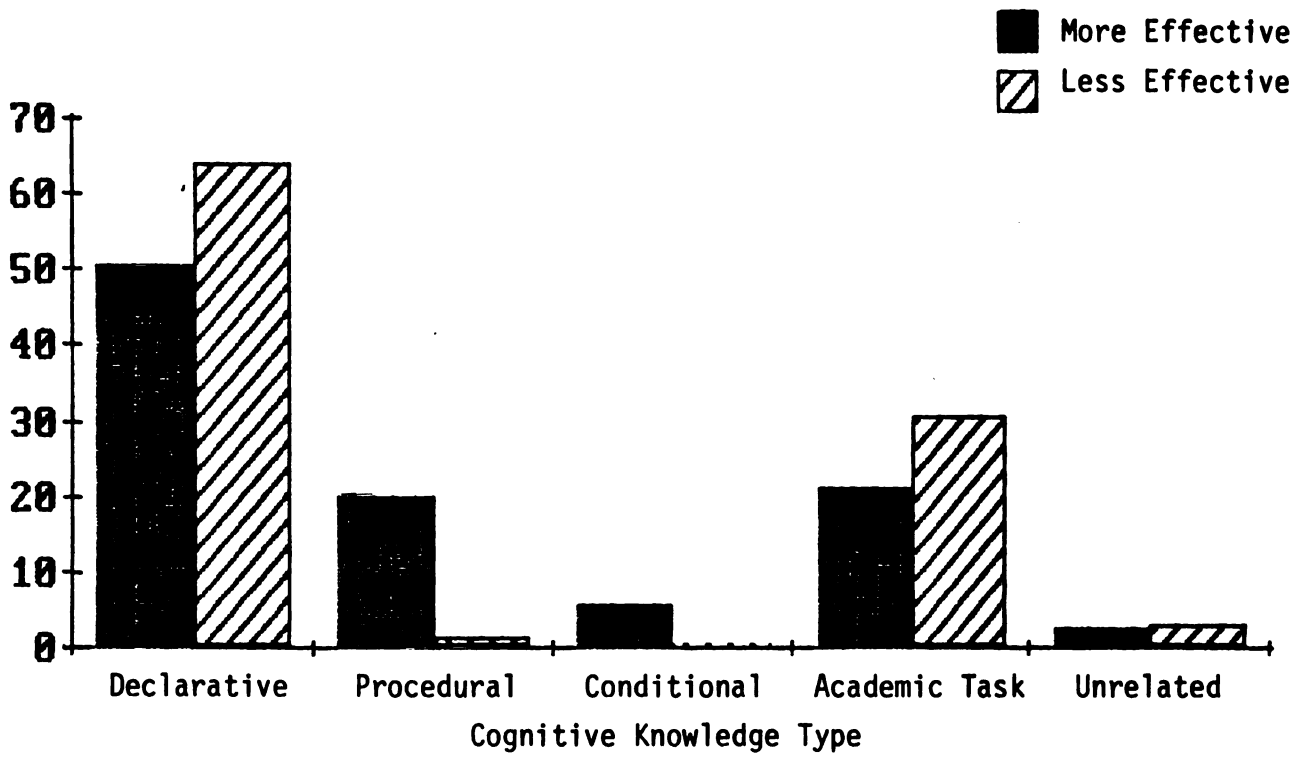


FIGURE 4.13

Comparison of Cognitive Knowledge Types in the Average Skill Lessons of the More and Less Effective Teacher Groups

between teachers' elicitations and the knowledge focus of instructional interactions between teachers and students in skill lessons that merit further investigation. On the one hand, do teachers' elicitations establish the knowledge focus of instructional interactions with students? Or are elicitations more a reflection of a pre-established plan for covering skill content in a particular fashion? The differences in percentages of sequences topically focused on skill information (Figure 4.7) and those conveying procedural knowledge compared to declarative knowledge (Figure 4.13) also suggest, however, that much of the skill information elicited even by the more effective teachers stressed declarative information about skills.

Instructional Purpose (Assessment or Assistance) of sequences containing elicitations

Research Question 2 asked if there were differences in the perceived instructional purpose of interaction sequences (i.e., assessment versus assistance functions). This section addresses the question of whether there were differences between teacher groups in the instructional uses of elicitations in interaction sequences at the lesson level. This code looked only at teacher-student sequences in which verbal elicitations were present. Sequences coded structurally as Teacher Monologue were not included in the analysis. The purpose was to clarify how teachers were using elicitations to promote student skill learning.

To perform the repeated measures ANOVA to test for differences in interaction sequence instructional purpose between the two teacher groups, the five assistance subcategories and six assessment subcategories described in Table 3.12 were collapsed into two general categories. Table 4.9 presents the means, standard deviations and percentages of total interaction sequences for the two general categories, as well as the breakdown into subcategories.

Although the less effective teacher group showed greater focus on assessment than assistance compared to the more effective teacher group (23.52 mean sequences for assessment and 6.44 mean sequences for assistance versus 20.42 mean sequences for assessment and 8.92 for assistance), the Group x Instructional Purpose Categories interaction effect was nonsignificant ($F(3, 30) = .824$, $p = .491$). Additionally, the between groups main effect difference was not significant ($F(1, 10) = .046$, $p = .845$). Again, however, the main effect for categories was strongly significant ($F(3, 30) = 59.575$, $p < .0001$). These results indicate that for both groups the main instructional purpose of elicitations in interaction sequences appeared to be focused on assessing what students know rather than on providing instructional assistance in learning how to use reading skills. While the means show a tendency on the part of the more effective group to provide more instructional assistance through elicitations, these differences were

TABLE 4.9

Means (and Standard Deviations) and Percentages of Instructional Purpose Categories for Interaction Sequences of the More and Less Effective Teacher Groups

Teacher Group	Assistance		Categories of Assistance (% of Total Sequences)									
			Correct Answer-4		Ordering Elicit-5		Content Background-8		Skill Background-9		Tasks and Directions-11	
	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%
More effective L=26 X̄ = 34.88	8.92 (3.57)	25.5	.5 (.76)	1.4	2.08 (1.9)	6.0	.5 (.86)	1.4	2.77 (2.41)	7.9	3.08 (2.68)	8.8
Less effective L=25 X̄ = 35.48	6.44 (3.8)	18.3	1.08 (1.38)	3.1	0.04 (.2)	0.1	.48 (1.83)	1.4	.4 (.82)	1.1	4.24 (2.86)	12.6

Teacher Group	Assessment		Categories of Assessment (% of Total Sequences)									
			Example Content-1		Skill Use-2		Combination of 1 & 2-3		Background Knowledge Example Content-6		Background Knowledge Skill Strategy-7	
	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄ (SD)	%	X̄(SD)	%	X̄(SD)	%
More effective	20.42 (7.74)	58.5	6.39 (6.09)	18.3	4.15 (5.86)	11.9	3.54 (5.37)	10.1	.69 (1.64)	2.0	4.0 (2.94)	11.5
Less effective	23.52 (12.45)	66.7	13.16 (11.49)	37.3	.36 (1.04)	1.0	.92 (2.33)	2.6	1.72 (3.47)	4.9	3.92 (4.14)	11.1

TABLE 4.9 (continued)

Teacher Group	Categories of Assessment (% of Total Sequences)					
	Knowledge of Task Procedures/Directions-10		Behavior Management-12		Sequences with No Elicitations	
	$\bar{X}$(SD)	%	$\bar{X}$(SD)	%	$\bar{X}$(SD)	%
More effective	1.65 (2.43)	4.7	1.19 (1.63)	3.4	4.39 (2.39)	12.6
Less effective	3.44 (3.27)	9.8	1.52 (1.92)	4.3	3.76 (2.42)	10.7

Significance Levels:

Between groups - N.S. $F(1,10) = 0.46$, $p = .835$
Within categories - * $F(3,30) = 59.575$, $p = 0$
Group x categories interaction - N.S. $F(3,30) = .824$, $p = .491$

statistically negligible. As shown in Figure 4.14, the percentages of average lesson sequences focused on assessment was 58.5 per cent for the more effective group and 66.7 per cent for the less effective group, while 25.5 per cent of the interaction sequences for the more effective group and 18.3 per cent for the less effective group were focused on providing assistance. Thus, it appears that the teachers, regardless of effectiveness grouping, were similar in numbers of total sequences devoted to assessment or assistance generally.

Although the subcategory data reported in Table 4.9 have not, at this time, been tested for statistical differences, the breakdown of interaction sequences into the subcategories of assessment and assistance purposes encourage discussion and speculation about possible differences in the specific assessment and assistance questioning practices for the two teacher groups. Figure 4.15 visually depicts the average lessons in terms of the percentages of sequences in the various subcategories for the more effective and less effective teacher groups.

Regarding assessment, the findings suggest that there were qualitative differences in <u>what</u> the more and less effective teachers assessed in their interactions with students in skill lessons. The less effective teachers' sequences focused on assessing students' provision of correct answers to example items which required skill use,

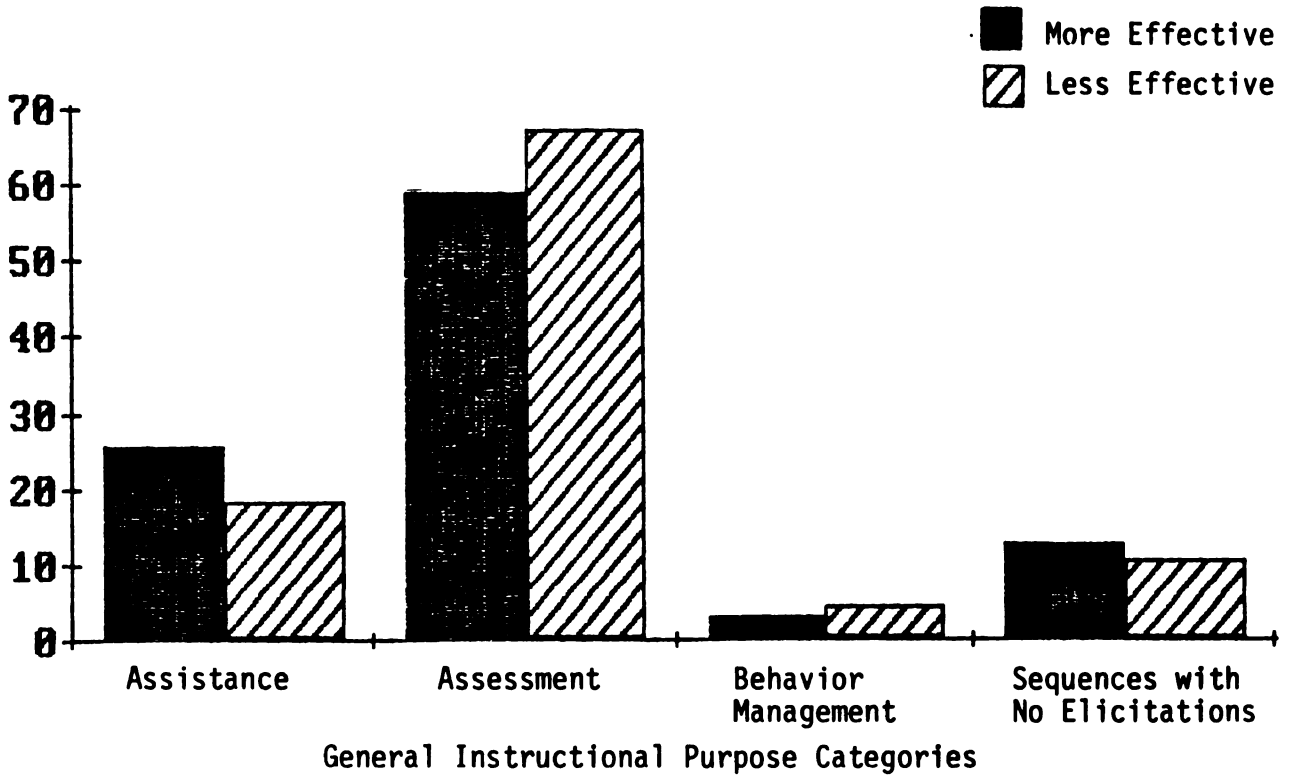
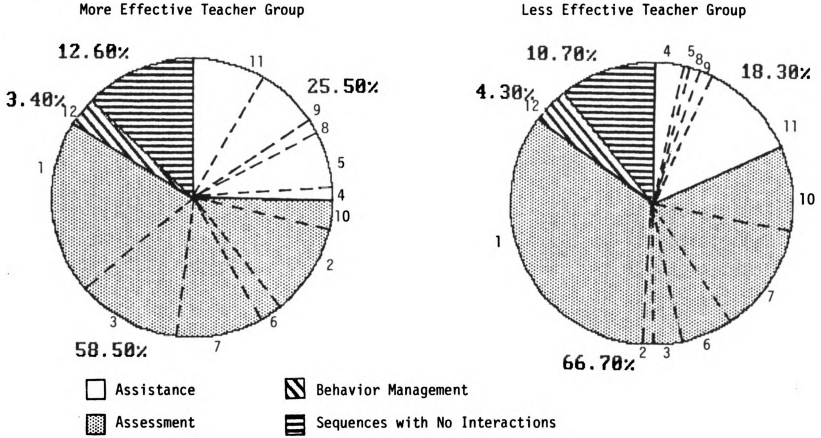


FIGURE 4.14

A Comparison of the Instructional Purposes of Interaction Sequences Between the More and Less Effective Teacher Groups' Average Lessons



(See Table 3.12 for numerical code descriptions)

FIGURE 4.15

The More and Less Effective Teacher Groups' Average Lessons Characterized as Percentages of Instructional Purpose Categories (Assessment and Assistance) and Subcategories

37.3 per cent, compared to 18.3 per cent of the more effective teacher group's sequences. Likewise, 9.8 per cent of the less effective teachers' sequences assessed students' knowledge of the directions for completing practice tasks associated with the skill compared to 4.7 per cent of the more effective teachers' sequences. Interestingly, 11.9 per cent of the more effective teachers' sequences focused on assessing students' strategic understanding of how to perform the skill versus 1.0 per cent of the less effective teachers' sequences.

Regarding assistance purposes of interaction sequences, Figure 4.15 suggests that the more effective teachers organized their elicitations in 6.0 per cent of lesson interaction sequences (versus 0.1 per cent of the less effective teachers' sequences) in a systematic fashion to guide acquisition of a strategy for performing a given skill when reading. Further, while teachers in both groups used interaction sequences to assess students' background knowledge of the skill being taught at equal levels of occurrence (11.5 per cent for the more effective group and 11.1 per cent for the less effective group), the content foci appeared different. 7.9 per cent of the more effective teachers' sequences were identified as focusing on assisting students in developing background knowledge about skill features needed to perform the skill successfully, compared to 1.1 per cent of the less effective teachers' sequences.

Overall, the sequence distribution shown through percentages in the subcategory analyses was supportive of patterns of differences between the two groups in skill lesson focus suggested by the previously reported findings.

Summary of Findings for Research Question 2

Research Question 2 compared the instructional interaction sequences in skill lessons of the more effective and less effective teacher groups on several dimensions. These were: elicitation type (i.e., product, process, usefulness, and academic management); sequence structural form; sequence topical information content; evaluation information content and structural form; sequence cognitive knowledge type; and interaction sequence instructional purpose (i.e., assessment vs. assistance). Two-way repeated measures ANOVAs, used to test for differences, indicated that there were strong significant within subjects main effects for categories on five coded dimensions. Although there were few statistically significant main effect differences between teacher groups or Group x Category interactions, there were trends observed for some of the analyses suggesting possible differences given a larger sample size. Trends were noted in the following areas: (a) a group by category interaction for sequence topical information content; (b) a group by category interaction for the informational content of teachers' evaluations of student responses; and (c) a between groups main effect for differences in evaluation structural forms.

Although strong statistical differences between the two teacher groups failed to materialize, there was an element of consistency qualitatively observed across the findings that articulates potential patterns of differences in elicitation practices and offers direction for subsequent investigations.

Qualitative patterns in the lesson-level results were the following. (1) The more effective teacher group posed a more balanced variety of types of elicitations than the less effective group, including process and usefulness elicitations. (2) The numbers of elicitations posed by teachers in both groups seemed high relative to lesson length. The more effective teachers averaged more elicitations per lesson overall--a reflection of consistently longer skill lessons. When juxtaposed with both groups' almost equal number of sequences, however, the more effective teachers appeared to engage students in longer sequences with more elicitations per sequence.
(3) Regarding sequence structural form, the more effective teachers engaged students in more extended sequences than the less effective teachers, particularly following student responses that were accepted. (4) For sequence topical information content, the more effective teachers focused sequences more on skill information and less on academic task management than did the less effective teachers. Both groups, however, showed preference in focusing on sequence information related to practice example content, although

this was more prominent for the less effective teachers. (5) In terms of teacher evaluations to student responses, the more effective teachers' provision of more verbal feedback was consistently strong regardless of evaluation form. Both groups used simple evaluation form, elaborations and elicitations in equal proportions, however. The information content focus of evaluations for the more effective teacher group stressed skill information more than did those of the less effective teachers. (6) The cognitive knowledge type focused on most consistently in skill lessons for both groups was declarative knowledge. The more effective teachers seemed to balance this, however, with procedural and conditional knowledge foci. The only other kind of knowledge stressed in lessons of less effective teachers was related to academic task procedures. (7) For both teacher groups the primary instructional purpose of sequences containing elicitations was assessment rather than assistance. The subcategory analysis within these general categories suggested differing foci in terms of the content of assessment and assistance elicitations, however.

Taken together, the quantitative and qualitative findings highlight the complexity of teacher questioning behaviors in reading skill lessons. They provide patterns of evidence that support potential differences in the lesson-level questioning practices of teachers who were designated as more effective and less effective. Repeatedly, these differences most often seemed to be

related to how teachers chose to explicitly elicit skill information versus information about academic task procedures during the lesson.

Research Question 3: Positioning of Sequences, Elicitations and Evaluation Elements

Research Question 3 investigated the positioning of instructional sequences with various form, content and purpose characteristics within the structural context (phases) of the reading skill lessons of more and less effective teachers. The purpose of this primarily qualitative aspect of the research was exploratory--to ascertain whether the positioning of lesson discourse elements was an area which would distinguish the skill lesson questioning practices of the teachers in the more effective group from those in the less effective group. For this reason, combined with the complexity created by the number of individual phase variables identified when the coding schemes were crossed with six lesson phases, no formal statistical tests for differences were performed on the phase data for this study. If differential positioning of discourse elements in lesson phases was supported by the data, this aspect of the research would help highlight potential specific areas of questioning behaviors within lessons for subsequent statistical analyses. Thus, while patterns of differences are

noted below, they will be discussed cautiously in the spirit of data exploration.

To answer the component questions of Research Question 3, each of the areas investigated at the lesson level in Research Questions 1 and 2 were broken down for an examination of the frequency data within the lesson phases identified as characterizing skill lessons--i.e., Introduction, Presentation, Guided Practice, Recitation Practice, Closure and Review phases. The lesson profiles constructed as part of the qualitative data analysis (see Chapter III) made it possible to visualize patterns in how these phases were placed sequentially and temporally within the lesson structure for teachers in the two groups. Thus, coded interaction sequences and their primary teacher discourse elements--elicitations and evaluation elements, were described relative to the structural and temporal context of the skill lesson.

The positioning results will be described for the average lessons of the two teacher groups in the following sequence. First, the phase distribution of lesson length factors, teacher talk, and discourse components will be presented. This will enable creation of general temporal characterizations for the average more and less effective teacher groups' skill lessons. Second, the distribution of kinds of elicitations by lesson phases will be described. Third, the positioning of instructional sequences with various structural form features will be shown. Fourth, aspects

of the positioning of instructional sequences with different overall topical information content foci will be presented. Fifth, the phase positioning of evaluation elements according to information content foci and structural form will be described. Sixth, lesson phases will be characterized according to their cognitive knowledge type foci. Seventh, lesson phases will be described according to the perceived instructional purpose of constituent lesson interaction sequences.

General Phase Characterization of the Average Skill Lesson: Distribution of Length, Teacher Talk, and Discourse Elements

Research Question 3 asked if there were differences between the more and less effective teacher groups in terms of how skill lessons were generally characterized according to phase length, teacher talk in phases, and frequency distributions of sequences, elicitations and evaluations in phases. Table 4.10 shows the distribution of lesson length factors and discourse elements (mean frequencies, standard deviations and percentages). The percentages reported for each phase show the distribution of each variable relative to its total for the lesson.

The results show that the more effective teachers distributed time more evenly throughout lesson phases than did the less effective teachers. The average skill lesson for the less effective teachers was centered around the Recitation Practice phase (9.42 minutes, 42.7 per cent of timed

TABLE 4.10

Phase Distribution of Average Lesson Factors: Length (Time and Transcript Lines); Amount of Teacher Talk; and Lesson Discourse Components for the More and Less Effective Teacher Groups

	Phase	Timed Length		Total Line Length		Lines/ Teacher Talk		Sequences		Elicitations		Evaluations	
		X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%
More Effective	Introduction	1.57 (1.26)	5.9	17.46 (12.53)	4.6	13.92 (9.48)	5.6	2.19 (1.55)	6.3	5.15 (4.91)	3.8	2.62	2.3
	Presentation	6.13 (4.72)	22.9	80.31 (62.12)	21.3	54.92 (38.02)	21.9	7.15 (6.01)	20.5	23.31 (19.55)	17.4	20.00 (14.8)	17.6
	Guided Practice	7.94 (5.45)	29.7	115.81 (85.54)	30.7	74.35 (53.01)	29.6	8.50 (5.91)	24.3	42.19 (31.17)	3.15	36.0 (32.5)	31.8
	Recitation Practice	6.99 (5.97)	26.2	104.15 (99.19)	27.6	64.39 (60.59)	25.7	9.58 (9.54)	27.4	41.15 (42.44)	30.7	35.96 (40.23)	31.7
	Closure	1.96 (1.99)	7.3	22.58 (18.68)	6.0	16.5 (13.49)	6.6	3.08 (2.17)	8.8	8.54 (7.40)	6.4	6.04 (7.31)	5.3
	Reviews	2.53 (2.63)	9.5	42.27 (42.30)	11.2	27.54 (27.35)	11.0	4.42 (4.03)	12.7	13.69 (13.12)	10.2	12.73 (12.73)	11.2

TABLE 4.10 (continued)

	Phase	Timed Length		Total Line Length		Lines/ Teacher Talk		Sequences		Elicitations		Evaluations	
		$\bar{X}$(SD)	%	$\bar{X}$(SD)	%	$\bar{X}$(SD)	%	$\bar{X}$(SD)	%	$\bar{X}$(SD)	%	$\bar{X}$(SD)	%
Less Effective	Introduction	2.04 (1.52)	9.3	21.52 (19.86)	8.3	14.92 (12.44)	8.7	3.6 (3.12)	10.2	7.08 (6.93)	7.6	5.08	6.8
	Presentation	3.78 (3.64)	17.1	48.00 (52.23)	18.6	34.52 (36.86)	20.1	6.2 (5.75)	17.6	16.76 (21.66)	18.0	12.24 (17.40)	16.4
	Guided Practice	3.96 (4.98)	18.0	46.64 (61.61)	18.1	31.04 (40.78)	18.1	5.16 (6.55)	14.5	17.12 (22.31)	18.3	13.6 (18.57)	18.3
	Recitation Practice	9.42 (7.10)	42.7	123.88 (96.59)	47.9	78.36 (58.41)	45.6	17.56 (14.81)	49.8	45.76 (37.22)	49.0	38.84 (30.56)	52.2
	Closure	.87 (1.17)	3.9	9.12 (10.31)	3.5	7.56 (8.08)	10.2	1.6 (1.12)	4.5	3.16 (3.75)	3.4	1.12 (2.19)	1.5
	Reviews	.68 (1.17)	3.1	8.68 (14.78)	3.4	6.04 (10.41)	3.5	1.12 (1.86)	3.2	3.12 (5.48)	3.3	2.84 (5.56)	3.8

lesson length). On the other hand, time in the more effective teachers' average lesson was evenly distributed among the Presentation phase (6.13 minutes, 22.9 per cent of timed lesson length), Guided Practice phase (7.94 minutes, 29.7 per cent of timed lesson length), and the Recitation Practice phase (6.99 minutes, 26.2 per cent of timed lesson length). Additionally, the more effective teacher group spent a considerably greater portion of the average lesson conducting reviews (2.53 minutes, 9.5 per cent of timed lesson length compared to .68 minutes, 3.1 per cent of timed lesson length for the less effective group). The same distributional patterns are repeated generally for all length variables reported. The standard deviations indicate that phase time distribution varied widely across teachers in the sample, however.

Regarding the distribution of teacher talk in lesson phases, comparison of the means for total line length and lines of teacher talk indicate that for the more effective teachers, teacher talk predominated in lesson introductions, presentations and closures; and guided practice, recitation practice and review phases were more interactive with student verbal participation. In the average lesson for the less effective group, it appears that teacher talk predominated in all lesson phases except Recitation Practice where transcript line counts suggest more equal student verbal participation. These patterns are shown in Figure 4.16. Figure 4.16 also illustrates potential differences in

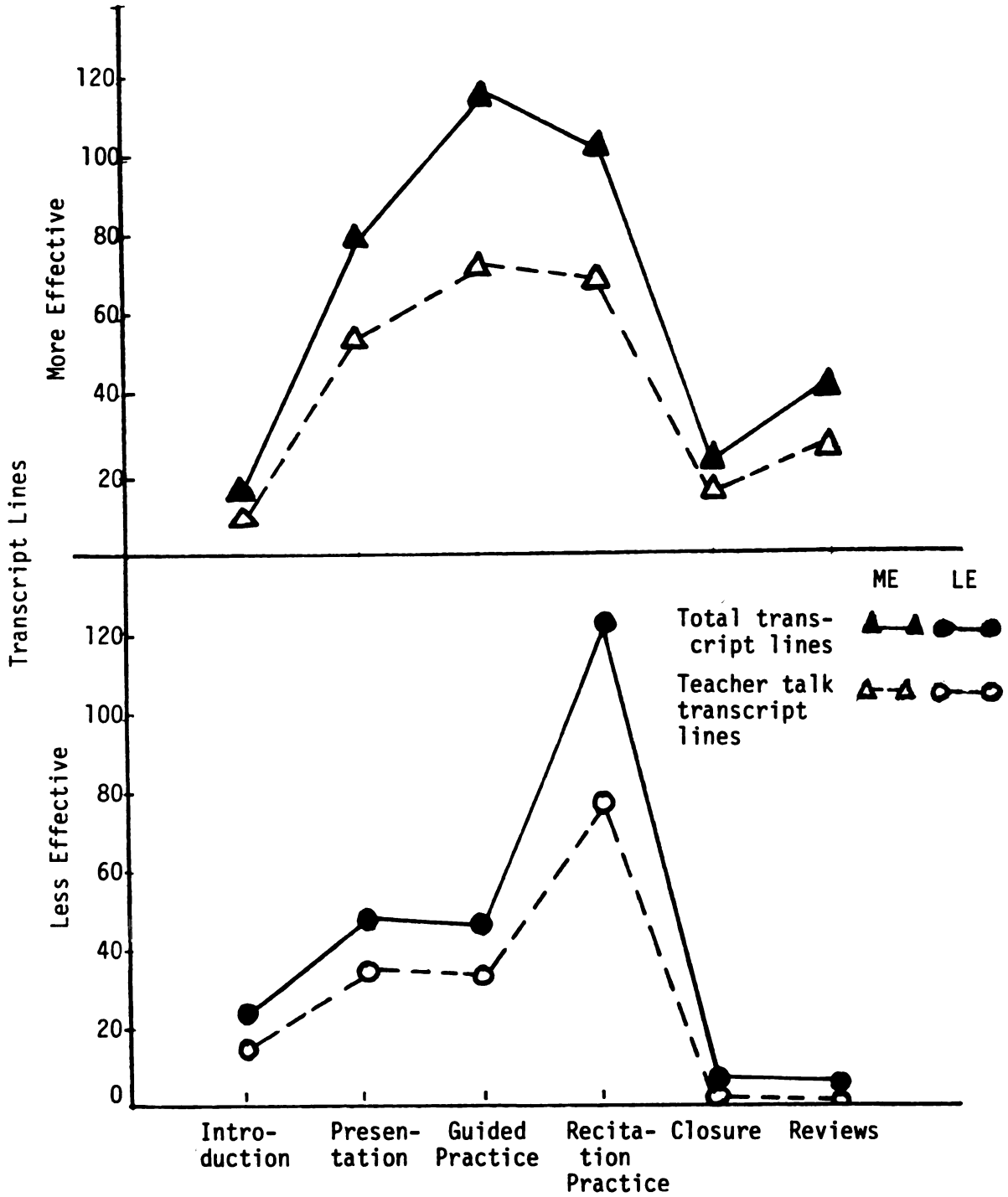


FIGURE 4.16

A Comparison of Average Lesson Phase Length (in Transcript Lines) for the More and Less Effective Teachers

the overall distributional profiles of the two teacher groups. Although Review is indicated as a separate phase in this figure (and in subsequent figural characterizations of lesson phases), in the flow of lesson events reviews were interspersed between and within practice phases in most teachers' lessons. Exact placement was not static.

Mean frequency distribution across phases, shown in Table 4.10, suggested differences in the lesson discourse patterns of teachers in the two groups. When lesson phases are viewed as numbers of sequences, it appears that the more effective teachers de-emphasized introductions in favor of longer closure and review sequences while the opposite was true of the less effective group. Mean elicitation frequency suggested differences in distribution also. For the more effective teachers, elicitations and evaluations occurred at roughly the same rate through Guided and Recitation Practice phases even though sequences appeared to be slightly longer during Guided Practice. For the less effective teachers, the Presentation and Guided Practice phases showed elicitations and evaluations occurring at the same rate despite slightly fewer sequences in Guided Practice. The occurrence of elicitations relative to lesson length and amount of teacher talk in transcript lines is depicted in Figure 4.17. The percentage of elicitations per sequences compared to the percentages of phase sequences is shown in Figure 4.18.

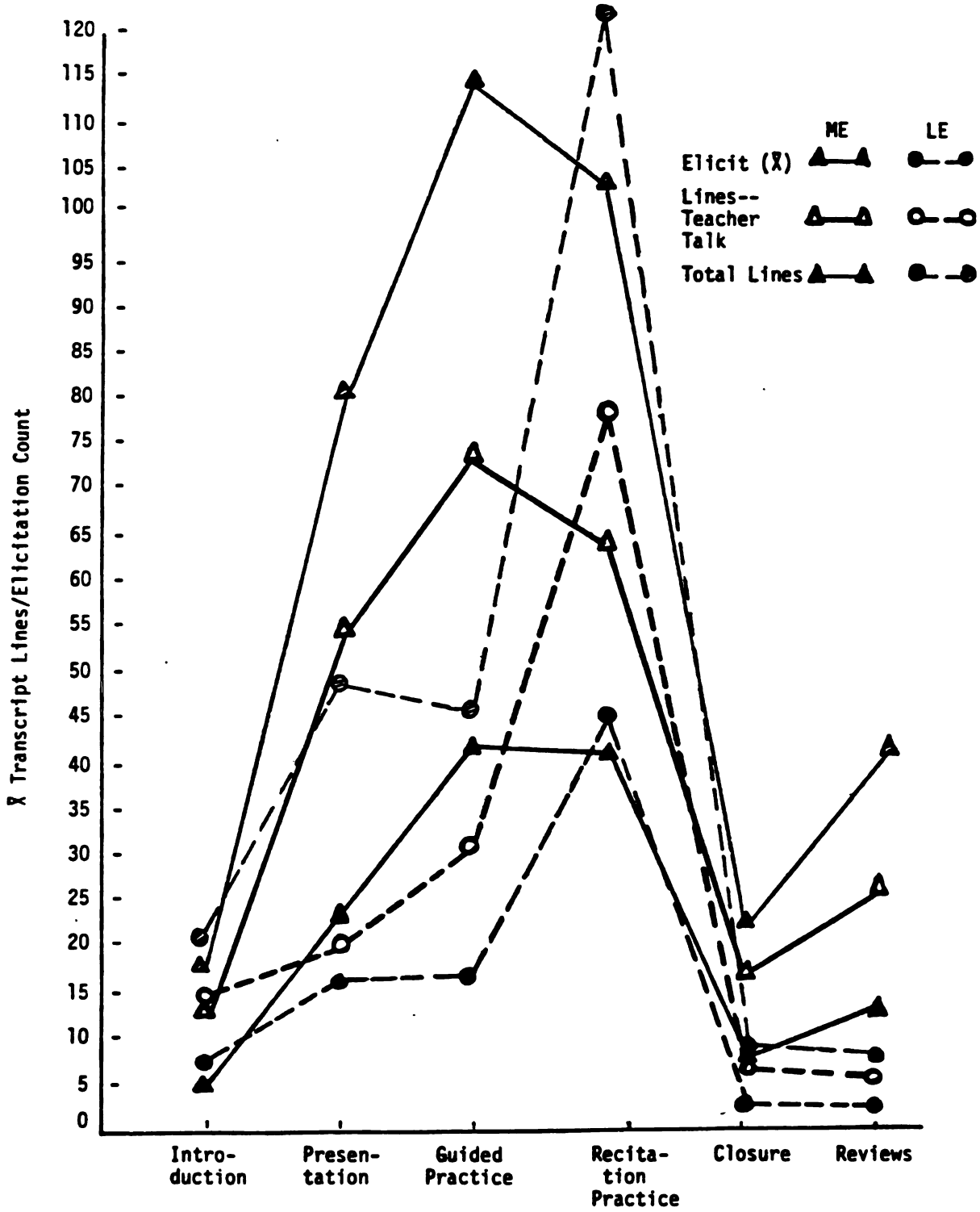


FIGURE 4.17

Elicitations Relative to Phase Length and Amount of Teacher Talk (Transcript Lines) in the Average Lessons of the More and Less Effective Teacher Groups

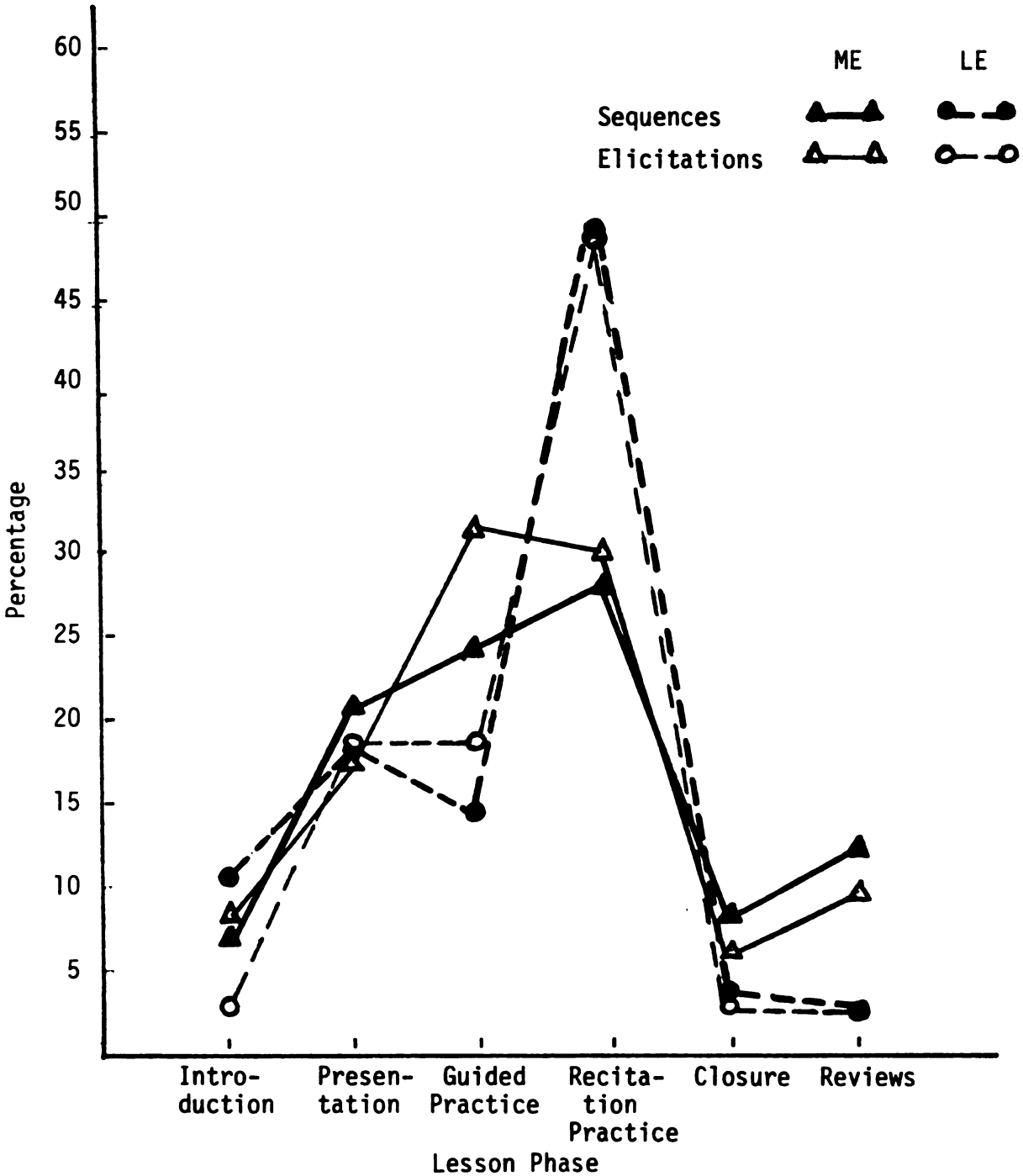


FIGURE 4.18

Percentage of Total Sequences Compared to Percentage of Total Elicitations in Lesson Phases of More and Less Effective Teacher Groups' Average Lessons

These results highlight the emphasis in the less effective teacher group's lesson on interaction during Recitation Practice (49.0 per cent of total elicitations and 52.2 per cent of total evaluations) compared to more balanced use of elicitations and evaluations in both Guided and Recitation practice phases by the more effective teachers.

Distribution of Kinds of Elicitations in Lesson Phases

Research Question 3 asked if there were differences between the more effective and less effective groups in how sequences that contain elicitations with different content foci were placed within phases of the average skill lesson. Table 4.11 shows the means, standard deviations and percentages of total elicitations for the four elicitation type categories of interest as they were distributed in lesson phases.

The findings indicated heavy use of elicitations during the practice phases of both teacher groups as expected, particularly in terms of product and academic management elicitations. Product elicitations for the more effective teacher group were, however, more evenly balanced between Guided Practice (36.5 per cent) and Recitation Practice (35.4 per cent) than they were for the less effective group (16.9 per cent and 59.9 per cent, respectively). In terms of mean frequencies, the more effective teachers elicited more process information consistently in all phases than did the less effective teachers. Process elicitations were most

TABLE 4.11

Means (and Standard Deviations) and Percentages of Total Types of Elicitations in Average Lesson Phases for the More and Less Effective Teacher Groups

	Phase	Product		Process		Usefulness		Academic Management		Other	
		X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%
More Effective	Introduction	.77 (1.66)	1.5	.15 (.79)	1.8	-	-	1.39 (1.75)	5.2	2.85 (2.92)	6.4
	Presentation	8.5 (8.8)	16.9	1.27 (2.63)	14.5	1.23 (2.01)	30.5	3.65 (3.69)	13.7	8.65 (8.77)	19.5
	Guided Practice	18.34 (12.92)	36.5	2.35 (3.51)	26.9	.12 (.43)	2.9	6.69 (6.3)	25.5	14.65 (12.47)	33.0
	Recitation Practice	17.81 (21.30)	35.4	1.12 (3.41)	12.8	-	-	11.12 (13.06)	41.8	11.12 (12.91)	25.0
	Closure	1.19 (1.67)	2.4	.39 (.90)	4.4	.08 (.27)	1.9	3.62 (3.29)	13.6	3.27 (4.09)	17.4
	Reviews	3.69 (3.80)	7.3	3.46 (4.66)	39.6	2.42 (3.58)	60.0	.65 (1.09)	2.5	3.46 (4.07)	7.8

TABLE 4.11 (continued)

	Phase	Product		Process		Usefulness		Academic Management		Other	
		X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%	X̄(SD)	%
Less Effective	Introduction	1.32 (3.11)	3.6	-	-	-	-	3.04 (2.17)	11.0	2.72 (3.32)	9.96
	Presentation	5.4 (7.69)	14.8	.44 (1.26)	31.4	0.4 (1.04)	76.9	5.4 (6.77)	19.6	5.0 (8.6)	18.7
	Guided Practice	6.16 (9.69)	16.9	.32 (1.25)	22.9	.12 (.44)	23.1	4.08 (5.31)	14.8	6.44 (9.15)	23.6
	Recitation Practice	21.84 (19.22)	59.9	.44 (1.42)	31.4	-	-	11.68 (10.92)	42.3	11.8 (12.26)	43.2
	Closure	.4 (1.32)	1.1	-	-	-	-	1.88 (1.79)	6.8	.88 (1.54)	3.2
	Reviews	1.36 (3.40)	3.7	.2 (.82)	14.3	-	-	.8 (1.44)	2.9	.76 (1.54)	2.8

frequent during interactive Review phases for the more effective teachers, probably because these reviews were heavily focused on information about skills (i.e., features and procedural steps for their use). The same pattern held for usefulness elicitations which focused in reviews on assessing students' knowledge of conditional information about skills.

Thus, these findings suggest a pattern of differences in how teachers in the more and less effective groups distributed kinds of elicitations throughout the average skill lesson. Also, it appears possible to infer that perhaps teachers favored the use of different kinds of elicitations depending on the lesson phase task being pursued. The distributional differences are graphically suggested in Figure 4.18 which allows comparison of the percentages of sequences and elicitations for the two groups.

The phase distribution of elicitation types in both groups' average lessons is shown in Figure 4.19. The patterns of product elicitation distribution for both groups resembles the overall elicitation distribution reported above. The more effective teacher group posed product elicitations with relatively equal frequency in Guided and Recitation Practice phases. The less effective teacher group concentrated product elicitations in Recitation Practice (which often constituted the bulk of the lesson) probably reflecting heavy reliance on the use of practice sheets with numerous items to cover as part of the lesson.

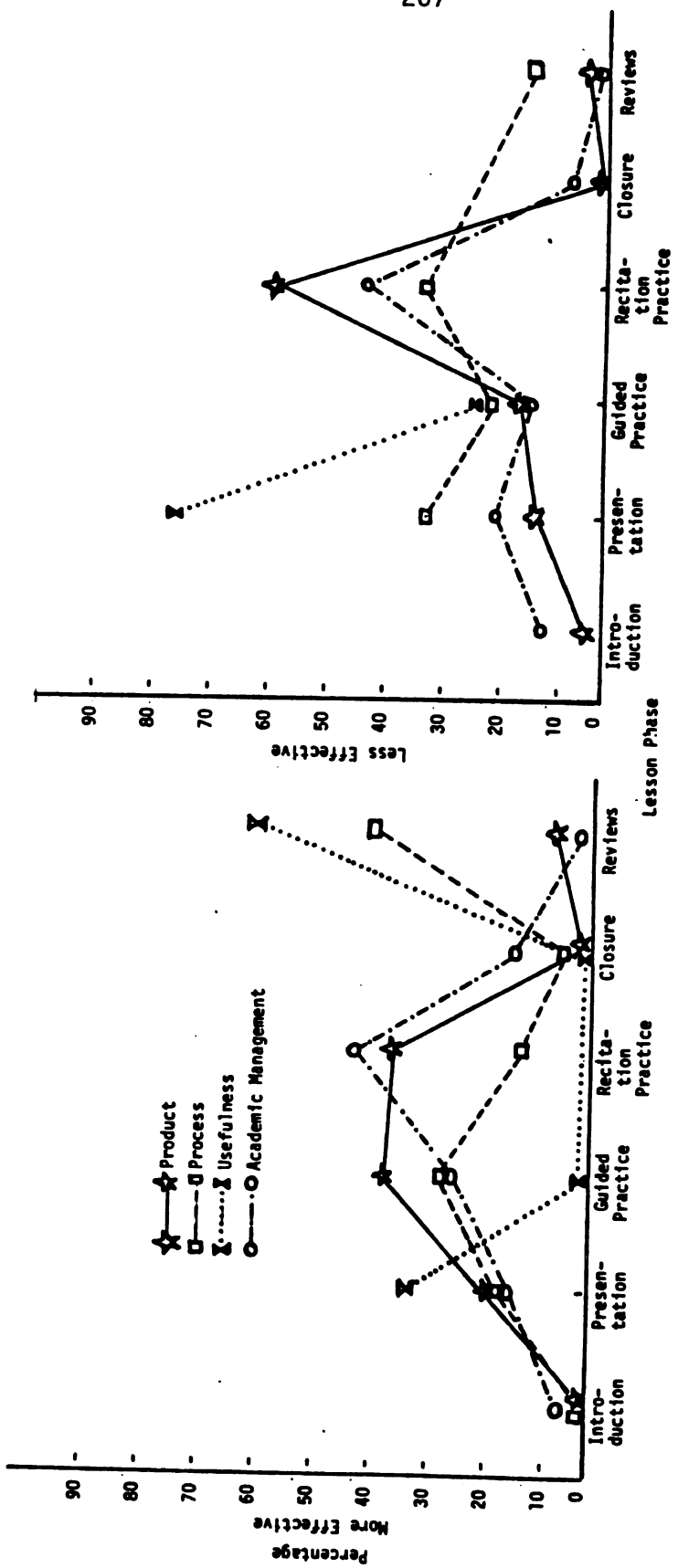


FIGURE 4.19

A Comparison of the Phase Distribution of Product, Process, Usefulness, and Academic Management Elicitation Types (Percentage of Type Occurrence) in the More and Less Effective Teacher Groups' Average Lessons

When viewing distributions of process elicitations, the negligible amounts of elicitations of this kind for the less effective teacher group, reported in Table 4.11, should be borne in mind. Process elicitations were most frequently posed by more effective teachers as part of Review phases (39.6 per cent), followed by use in Guided Practice (26.9 per cent). The lower frequency of process elicitations in the more effective teacher presentations was observed during the qualitative analysis to reflect greater use of expository monologues to convey procedural information about skills. To the extent that process elicitations were posed by the less effective teachers, they occurred most often during either practice phase, as well as during presentations.

Usefulness elicitations, a subcategory of process elicitations focused specifically on conditional knowledge about skills, were rarely found in less effective teacher group lessons except occasionally as part of presentations or within simple sequences in guided practice phases as shown in Figure 4.19. This kind of elicitation appeared to be posed relatively frequently by the more effective teachers (shown in Figure 4.19) during the Presentation phase (30.5 per cent), probably reflecting attempts to involve students in identification of relevant reading situations when skill use would apply. This finding most probably reflects a pattern found in the lessons of those teachers in this sample who were part of the Treatment group

in the Teacher Explanation Study (Duffy & Roehler, et al., 1986c). Treatment group training for that study included emphasis on including explicit expository statements about skill usefulness as part of lesson presentations. Interestingly, although teachers were encouraged to state this information for students as part of an explicit explanation, many chose to elicit it from students instead.

Usefulness elicitations were a major portion of Review phases (60.0 per cent) in the average lesson of the more effective teacher group. This may reflect the general lack of compatibility of this kind of skill information in the overall flow of practicing skill use when using practice examples.

For both teacher groups academic management elicitations occurred most frequently during Recitation Practice as would be expected given the reliance here on prepared practice materials. Also, the more effective teacher group showed more elicitations of this type during Closure (13.6 per cent) compared to Introductions (5.2 per cent), while the less effective teacher group showed greater use during Introductions (11.0 per cent) versus Closure (6.8 per cent). In other words, the average lesson of teachers in the more effective group de-emphasized academic tasks at the outset, saving information about directions for practice until the end of the lesson. Instead, these teachers spent the initial phase of the lesson stating or discussing opening remarks related to the lesson's skill topic.

In contrast, less effective group teachers opened the lesson with greater focus on the nature of the practice tasks that would be performed as part of the lesson. This finding suggests that students of teachers in each group received distinctly different introductory mental sets about what was likely to occur during the lesson. The implications of this finding for low group skill instruction will be considered in Chapter V.

Positioning of Sequences with Different Sequence Structural Form Characteristics

Research Question 3 asked if there were differences in the structural form of sequences in different lesson phases. Table 4.12 shows the breakdown of sequence structural forms by lesson phases for each teacher group in terms of total sequence frequency, mean sequence frequency, standard deviations, percentage of phase sequences and percentage of total form type in each group's average lesson. Findings will be reported in terms of the mean frequencies and percentages.

Mean sequence frequencies indicate that the more effective teacher groups generally balanced the structural forms of interaction sequences throughout the phases of the average lesson. For the less effective teacher group the use of simple sequence form during Recitation Practice stands out (6.68 mean sequences).

The findings for structural forms (as percentages of the number of phase sequences) show that the early lesson phases (Introduction and Presentation) for the more

TABLE 4.12

The Structure of Instructional Sequences within Phases for the Average Skill Lessons of the More and Less Effective Teacher Groups
(ME Group = 26 lessons; LE Group = 25 lessons)

		# Seq.	Frequency of Sequence Form Types in Phases*							% of Phase Sequences							% of Total Form Type in Lesson						
			TH	THS	S3	EAss	EAds	EIss	EIds	TH	THS	S3	EAss	EAds	EIss	EIds	TH	THS	S3	EAss	EAds	EIss	EIds
Intro.	ME	57	19 .73 (.78)	19 .73 (.78)	11 .42 (.70)	1 .04 (.20)	4 .15 (.54)	-	3 .42 (.33)	33.3	33.3	19.3	1.8	7.0	-	5.3	20.9	16.2	5.1	0.8	2.6	-	2.2
	LE	90	17 .68 (.63)	16 .64 (.76)	34 1.36 (2.16)	3 .12 (.33)	5 .2 (.5)	3 .12 (.33)	12 .52 (1.01)	18.9	17.8	37.8	3.3	5.6	3.3	13.3	25.8	12.2	10.7	4.2	5.8	4.6	8.4
Present.	ME	186	25 .96 (1.0)	32 1.23 (1.77)	50 1.92 (2.77)	9 .35 (.56)	32 1.23 (1.56)	5 .19 (.63)	33 1.27 (1.54)	13.4	17.2	26.9	4.8	17.2	2.7	17.7	27.5	27.4	23.4	7.1	20.7	7.6	23.7
	LE	155	14 .56 (1.10)	29 1.16 (1.43)	58 2.32 (2.56)	9 .4 (.71)	8 .32 (.48)	3 .12 (.44)	34 1.36 (2.20)	9.0	18.7	37.4	5.8	5.2	1.9	21.9	15.4	24.8	27.1	7.1	5.2	4.6	24.5
Guided Practice	ME	221	11 .42 (.70)	18 .69 (.97)	38 1.46 (2.37)	37 1.42 (1.45)	42 1.62 (1.88)	30 1.15 (1.87)	45 1.50 (1.68)	5.0	8.1	17.2	16.7	19.0	13.6	20.4	12.1	15.4	17.8	29.4	27.1	45.5	32.4
	LE	129	10 .40 (.76)	13 .52 (1.16)	44 1.76 (2.71)	5 .20 (.58)	26 1.04 (2.23)	7 .28 (.79)	24 .96 (1.51)	7.8	10.1	34.1	3.9	20.2	5.4	18.6	15.2	9.9	13.9	6.9	29.9	17.7	16.8
Recitation Practice	ME	249	10 .39 (.64)	18 .69 (1.26)	65 2.50 (3.57)	57 2.19 (4.2)	44 1.69 (2.70)	24 .92 (1.60)	31 1.19 (1.74)	4.0	7.2	26.1	22.9	17.7	9.6	12.5	11.6	15.4	30.4	45.2	28.4	36.4	22.3
	LE	439	13 .52 (.77)	49 1.96 (3.68)	167 6.68 (7.89)	58 2.32 (3.61)	43 1.72 (1.77)	45 1.80 (2.80)	64 2.56 (2.40)	3.0	11.2	38.0	13.2	9.8	10.2	14.6	19.7	37.4	52.7	80.6	49.4	69.2	44.8
Reviews	ME	115	6 .23 (.43)	6 .23 (.65)	37 1.42 (1.47)	16 .62 (.94)	26 1.00 (1.20)	3 .12 (.33)	21 .81 (.90)	5.2	5.2	32.2	13.9	22.6	2.6	18.3	6.6	5.1	17.3	12.7	16.8	4.6	15.1
	LE	28	1 .04 (.20)	6 .24 (.66)	9 .36 (.77)	- - 	3 .12 (.33)	2 .08 (.40)	7 .28 (.61)	3.6	21.4	32.1	-	10.7	7.1	25.0	1.5	4.6	2.8	-	3.5	3.1	4.9

*Total frequency; average/lesson (std. dev.)

TABLE 4.12 (continued)

		# Seq.	Frequency of Sequence Form Types in Phases							% of Phase Sequences							% of Total Form Type in Lesson						
			TM	TMS	S3	EAss	EAds	EIss	EIds	TM	TMS	S3	EAss	EAds	EIss	EIds	TM	TMS	S3	EAss	EAds	EIss	EIds
Closure	ME	80	22	23	13	6	7	3	6	27.5	28.8	16.3	7.5	8.8	3.8	7.5	24.2	19.7	6.1	4.8	4.5	4.6	4.3
			.85	.89	.50	.23	.27	.12	.23														
			(.83)	(.86)	(.59)	(.59)	(.45)	(.33)	(.43)														
	LE	40	11	17	6	-	1	2	3	27.5	42.5	15.0	-	2.5	5.0	7.4	16.7	13.0	1.9	-	1.2	3.1	2.1
			.44	.68	.24		.04	.08	.12														
			(.58)	(.56)	(.52)		(.20)	(.40)	(.33)														

For each group numbers in each category are:

- Overall Sequence Frequency
- Average per lesson
  (ME = 26 lessons)
  (LE = 25 lessons)
- Standard Deviation

Key to Table 4.12 headings:

TM = Teacher Monologue
TMS = Interactive Monologue
S3 = Simple Sequence
EAss = Extended: Accepted--Same Student
EAds = Extended: Accepted--Different Student
EIss = Extended: Incorrect Response--Same Student
EIds = Extended: Incorrect Response--Different Student

effective teachers were characterized by more teacher monologue sequences than for the less effective teachers. Also, teachers in both groups engaged in fewer interaction sequences during lesson closure. The more effective teacher group's use of interaction sequence forms was balanced during Guided and Recitation Practice phases. During Reviews, the more effective teachers tended to use simple sequence form most often. On the other hand, the less effective teacher group showed consistent reliance on simple sequence form (compared to extended forms) in all lesson phases except for Closure.

Regarding overall use of a particular kind of sequence form in lesson phases, the percentages of total form type reported in Table 4.12 (and shown in Figure 4.20) suggest that the teacher groups structured sequences in different ways relative to the task focus of the phase.

The more effective teachers employed most of their monologue and interactive monologue sequences during the Introduction and Presentation phases. Monologue sequence use was more evenly distributed throughout lesson phases for the less effective teacher group (except for Review phases). When instances of monologues were examined qualitatively, those of the less effective teachers seemed to occur in conjunction with the introduction of worksheet materials.

Regarding use of interaction sequence forms, the simple sequence form was used most often during the Recitation Practice phase by both groups (30.4 per cent for the more

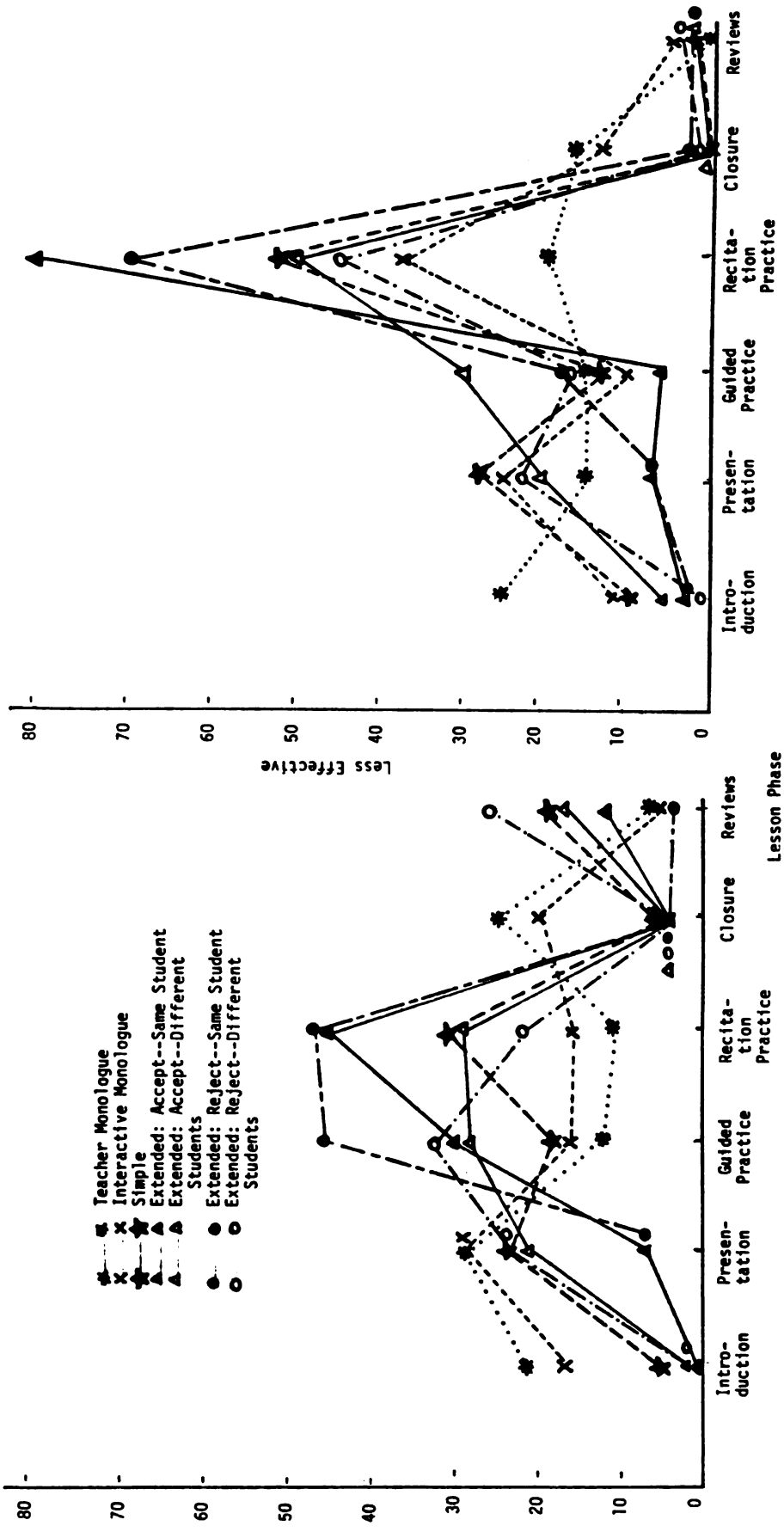


FIGURE 4.20

Phase Positioning of Sequences with Different Structural Forms in More and Less Effective Teacher Groups' Average Lessons

effective group and 52.7 per cent for the less effective group). Although teachers in both groups most often extended sequences with the same student during Recitation Practice (45.2 per cent for the more effective group and 80.6 per cent for the less effective group), the more effective teachers also used this form of extension during Guided Practice (29.4 per cent versus 6.9 per cent for the less effective group). Extensions with multiple student participants were relatively evenly distributed across presentations and practice phases for the more effective teacher group and highest for the less effective teachers during Recitation Practice. Interestingly, extensions based on incorrect or unaccepted student responses were most frequent for the more effective teacher group during Guided Practice and for the less effective teacher group during Recitation Practice.

Positioning of Sequences with Different Topical Information Content Foci

Research Question 3 asked if there were differences in the topical information content foci of instructional sequences within different lesson phases. Table 4.13(a) reports number of sequences distributed across lesson phases by total phase frequency, mean phase frequency, standard deviation, percentage of phase sequences, and percentage of total sequences per content category in the average lesson. The results support the observation that the topical content of focus in a particular phase appeared to be related to the

TABLE 4.13

Comparing Overall (a) Sequence Topical Information Content Focus and (b) Evaluation Statements' (within Sequences) Information Content Focus Characteristics in Phases within the More and Less Effective Teacher Groups' Average Lessons
(ME group = 26 lessons; LE group = 25 lessons)

A. Sequence Content Focus within Phases

Phase	# Sequences	Frequency of Content Categories*						% of Phase Sequences						% of Total Content Cat. in Lesson					
		St. Exp.	Skill Info.	Use in Ex.	Task Proced.	St. Beh.	Prior Lesson Content	St. Exp.	Skill Info.	Use in Ex.	Task Proced.	St. Beh.	Prior Lesson Content	St. Exp.	Skill Info.	Use in Ex.	Task Proced.	St. Beh.	Prior Lesson Content
Intro.	More (57)	9 .35 (.69)	19 .73 (.92)	5 .19 (.8)	21 .81 (1.14)	2 .08 (.27)	(1)	15.8	33.3	8.8	36.8	3.5	(1.8)	40.0	7.0	1.0	12.2	33.3	
	Less (90)	10 .4 (1.08)	20 .8 (1.68)	12 .48 (2.0)	42 1.48 (1.32)	5 .2 (.5)	(1)	11.1	22.2	13.3	46.7	5.6	(1.1)	45.5	14.6	27.0	16.3	26.3	
Present.	More (186)	65 .25 (.77)	113 4.37 (3.45)	36 1.39 (2.19)	27 1.04 (2.03)	-	(3)	3.5	61.0	19.4	14.3	-	(1.6)	28.9	41.8	8.3	15.7	-	
	Less (155)	3 .12 (.6)	64 2.56 (3.14)	32 1.28 (2.28)	53 2.12 (3.3)	3 .12 (.33)	-	1.9	41.3	20.7	34.2	1.9	-	13.6	46.7	7.3	20.5	15.8	
Guided Practice	More (221)	4 .15 (.46)	20 .77 (.99)	161 6.19 (4.53)	33 1.27 (1.73)	3 .12 (.38)	-	1.8	9.0	72.9	14.9	1.4	-	17.8	7.4	37.2	19.2	5.0	
	Less (129)	2 .08 (.28)	10 .4 (.91)	77 3.08 (4.79)	39 1.56 (2.38)	1 .04 (.2)	-	1.6	7.8	59.7	30.2	0.8	-	9.1	17.3	17.6	15.1	5.3	
Recitation Practice	More (249)	1 .04 (.2)	5 .19 (.49)	210 8.08 (8.46)	33 1.27 (1.69)	-	-	0.4	2.0	84.3	13.3	-	-	4.4	1.8	48.5	19.2	-	
	Less (439)	7 28 (1.04)	29 1.26 (2.69)	311 12.33 (12.51)	80 3.2 (3.63)	7 .28 (1.02)	(5) .2 (.82)	1.6	6.6	70.8	18.2	1.6	(1.1)	31.8	21.2	71.0	83.0	36.8	(11.4)
Reviews	More (115)	-	99 2.81 (3.42)	12 .46 (1.45)	3 .12 (.43)	1 .04 (.02)	-	-	86.1	10.4	2.6	0.9	-	-	36.5	27.7	1.7	16.7	
	Less (28)	-	15 .6 (1.29)	5 .2 (.71)	8 .32 (.63)	-	-	-	53.6	17.9	28.6	-	-	-	11.0	1.1	3.1	-	
Closure	More (80)	2 .08 (.39)	14 .54 (.81)	8 .31 (.47)	56 2.15 (1.91)	-	(2)	2.4	17.5	10.0	70.0	-	-	8.9	5.2	1.9	32.6	-	
	Less (40)	-	4 .16 (.37)	6 .24 (.66)	29 1.16 (.75(	-	(1) .04 (.2)	-	10.0	15.0	72.5	-	(2.5)	-	2.9	1.4	11.2	-	(14.3)

*Total frequency; average/lesson (std. dev.)

TABLE 4.13 (continued)

B. Content Focus of Evaluation/Elaborations in Sequences within Phases*

Phase	# Sequences	Frequency of Content Categories* Skill Info.	Example Content	Task Proced.	Other	% of Phase Sequences Skill Info.	Example Content	Task Proced.	Other	% of Total Cont. Cat. in Lesson Skill Info.	Example Content	Task Proced.	Other
Intro.	More (57)	15 .58 (.95)	4 .15 (.78)	6 .23 (.51)	6 .27 (.53)	26.3	7.0	10.5	10.5	4.9	1.1	7.1	20.0
	Less (90)	17 .44 (1.57)	11 .92 (1.85)	23 .92 (1.38)	14 .56 (1.29)	18.9	12.2	25.6	15.6	13.9	2.8	6.7	35.0
Present.	More (186)	106 4.08 (3.84)	22 .85 (1.22)	17 .65 (2.15)	3 .12 (.33)	57.0	11.8	9.1	1.6	34.8	6.3	20.0	10.0
	Less (155)	49 1.96 (2.51)	23 .92 (1.94)	42 1.68 (3.09)	6 .24 (.52)	31.6	14.8	27.1	3.9	16.1	6.6	49.4	20.0
Guided Practice	More (221)	54.5 2.1 (1.84)	129.5 4.8 (4.14)	14 .54 (.86)	6 .23 (.43)	24.5		6.3	2.7	17.9	37.3	16.5	20.0
	Less (129)	13 .52 (1.12)	68 2.72 (4.37)	18 .72 (1.54)	3 .12 (.33)	10.1	52.7	14.0	2.3	10.7	17.1	11.0	7.5
Recitation Practice	More (249)	20 .77 (1.63)	180 6.92 (7.66)	19 .73 (1.25)	4 .15 (.54)	8.0	72.3	7.6	1.6	5.6	33.7	22.4	13.3
	Less (439)	26 1.04 (2.05)	289 11.56 (13.00)	60 2.40 (3.38)	16 .64 (1.14)	5.9	64.7	13.7	3.6	21.3	71.4	36.6	40.0
Reviews	More (115)	90 3.46 (3.37)	7 .27 (.87)	2 .08 (.27)	3 .12 (.43)	78.3	6.1	1.7	2.6	29.6	2.0	2.4	10.0
	Less (28)	13 .52 (1.05)	3 .12 (.33)	3 .12 (.33)	-	46.4	10.7	10.7	-	10.7	0.8	1.8	-
Closure	More (80)	16 .62 (.80)	2 .08 (.27)	26 1.00 (1.13)	6 .23 (.82)	20.0	3.5	32.5	7.5	5.3	0.6	30.6	20.0
	Less (40)	2 .08 (.40)	2 .08 (.40)	11 .44 (.78)	1 .04 (.20)	5.0	5.0	27.5	2.7	1.6	0.5	6.7	2.4

*Feedback was not characteristic in all sequences within phases as indicated by percentages not totaling 100%.

nature of the instructional task of focus during the phase. Also, when viewed as percentages of the overall occurrence of a particular content focus, sequences with different content were more likely to appear in particular phases depending upon the teacher group.

The means and percentages in Table 4.13(a) for the two groups suggest the following patterns of similarities and differences in content foci. During the Introduction phase, the more effective teacher group balanced content focus on information about skill features and academic task procedures and directions (33.3 per cent and 36.8 per cent, respectively). The less effective teacher group focused on task procedures in Introduction sequences (46.7 per cent). During the Presentation phase, the more effective group stressed skill information content (61.0 per cent), while the less effective group emphasized both skill information (41.3 per cent) and task procedures (34.2 per cent). For both groups most of the phase sequences in Guided Practice and Recitation Practice focused on the content of the examples used to practice skills. The Review phases for the more effective teacher group focused heavily on skill information content (86.1per cent). Closure for teachers in both groups was heavily focused on task procedures.

Figure 4.21 shows the patterning of sequences with different content as percentages of the total sequences in a given phase within the average lessons for the two teacher groups. Overall, the results suggest that while skill

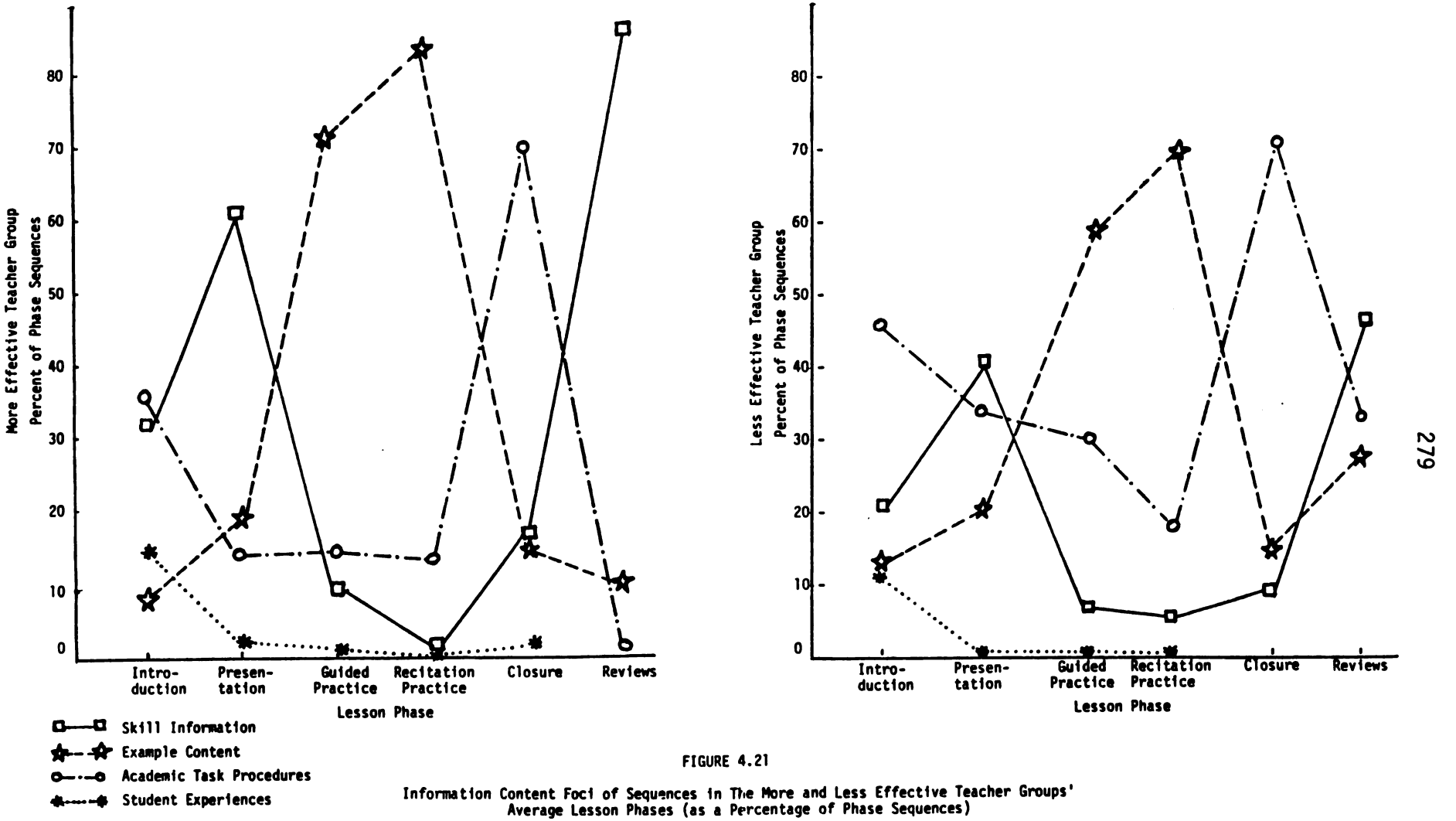


FIGURE 4.21

Information Content Foci of Sequences in The More and Less Effective Teacher Groups' Average Lesson Phases (as a Percentage of Phase Sequences)

information was important topically during lesson presentations, the more effective teacher group emphasized its importance by incorporating reviews of that information following its initial presentation. For the less effective teacher group, practice example content and task procedures were equally stressed during Recitation practice. For the more effective teacher group, sequences focused on practice example content were roughly balanced between the two practice phases with much less emphasis (relative to the less effective teacher group) on task procedures.

Positioning of Evaluations with Different Information Content Foci and Structural Form Characteristics

Research Question 3 asked of there were differences in the kinds of evaluation responses more and less effective teachers provide to student responses in different lesson phases. Evaluations were examined in terms of information content foci (i.e., skill information, practice example content, and task procedures) and structural form (i.e., simple statements, elaborations and elicitation probes).

Evaluation Information Content

Table 4.13(b) reports the phase placement of interaction sequences with different evaluation information content foci. The findings were very similar in distribution to the sequence topical information content findings reported in the previous section. In lesson presentations and reviews, the more effective teachers primarily provided evaluations focused on skill information

(34.8 per cent of this category). By comparison, the less effective teachers focused evaluations in presentations on task procedures and directions (49.4 per cent). Review phases were rarely included in their lessons. For the more effective teacher group, evaluations during lesson closure focused on task procedures (30.6 per cent). Figure 4.22 illustrates the similarity in distribution of evaluation content to overall sequence topical information content when compared to Figure 4.21.

There was, however, an interesting exception in terms of task procedure content. Although only 20.5 per cent of the task procedure-focused sequences for the less effective teacher group occurred during the Presentation Phase, 49.4 per cent of task procedure-focused evaluations of student responses were used in that phase. This result suggests that perhaps the main task of a presentation from the point of view of a teacher in the less effective group was to reinforce student responses that demonstrated understanding of how to perform up-coming practice tasks. For the more effective teacher group, the phase during which task-procedure evaluations most frequently occurred was Closure--corresponding to the overall focus of their sequences in this phase.

Evaluation Structural Form

Table 4.14 reports the results (mean sequences, standard deviations, and percentage of total verbal evaluations) of the phase analysis of interaction sequence

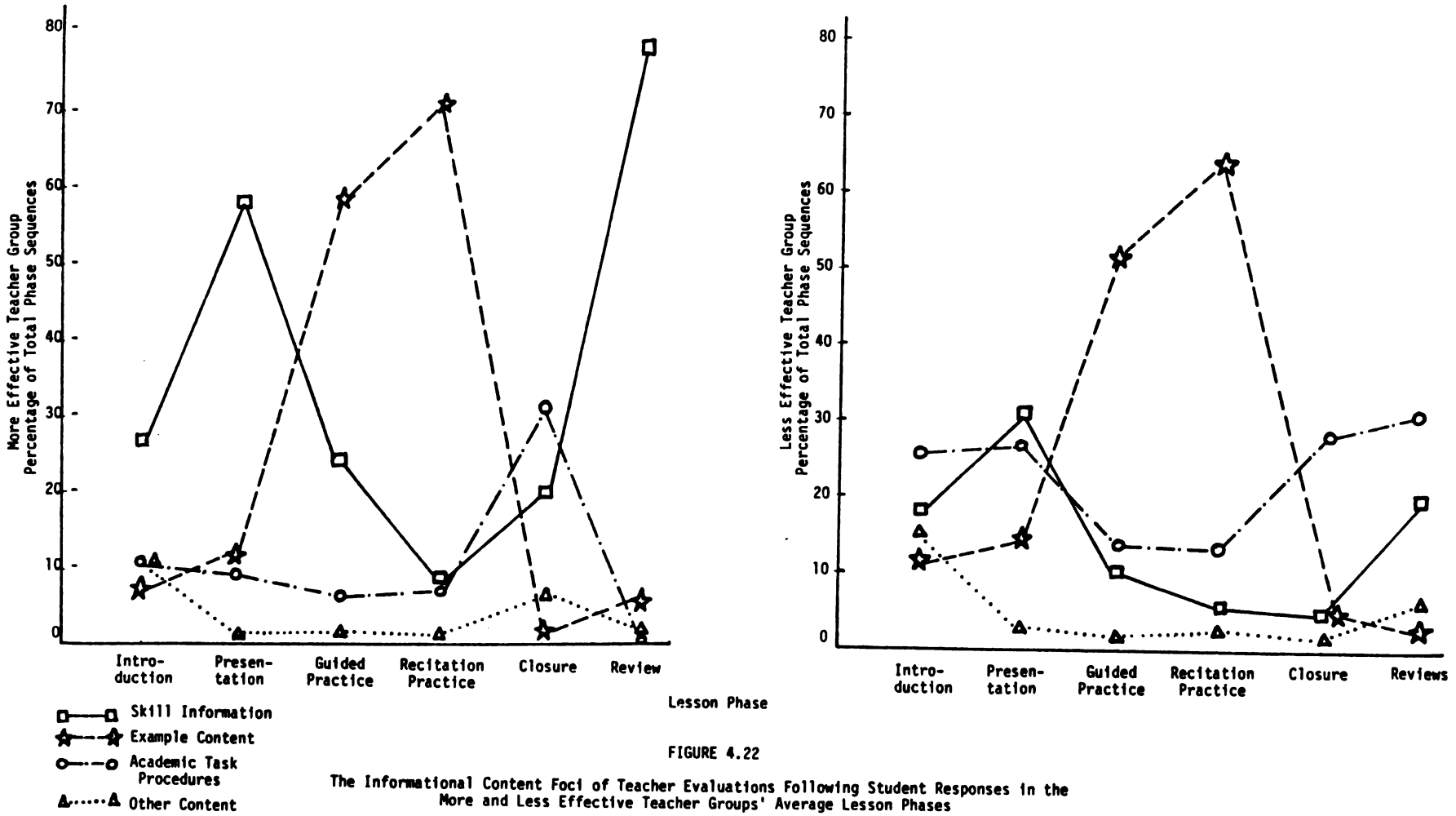


FIGURE 4.22

The Informational Content Foci of Teacher Evaluations Following Student Responses in the More and Less Effective Teacher Groups' Average Lesson Phases

TABLE 4.14

Means (Standard Deviations) and Percentages of the Evaluation Structural Forms Used in Average Lesson Phases for the More and Less Effective Teacher Groups

	Phase	Simple Evaluations $\bar{X}$(SD)	%	Elaboration Evaluations $\bar{X}$(SD)	%	Elicitation Evaluations $\bar{X}$(SD)	%	% of Total Phase Evaluations Simple	Elab.	Elicit.
	Introduction	1.04 (1.76)	2.7	.65 (1.03)	2.4	.73 (1.66)	2.0	39.7	25.0	27.9
	Presentations	7.50 (6.39)	18.8	6.00 (5.00)	22.2	4.77 (5.20)	13.0	37.5	11.5	23.9
More Effective	Guided Practice	13.46 (11.29)	33.7	8.08 (7.00)	29.9	13.0 (17.22)	35.5	37.4	22.4	36.1
	Recitation Practice	13.08 (15.39)	32.7	7.15 (7.81)	26.5	13.27 (17.50)	36.2	36.4	19.9	36.9
	Closure	1.92 (1.96)	4.8	1.35 (1.92)	5.0	1.42 (2.45)	3.9	31.9	22.3	23.6
	Reviews	4.12 (5.05)	10.3	4.23 (4.54)	15.7	3.35 (3.70)	9.1	32.3	33.2	26.3

TABLE 4.14 (continued)

	Phase	Simple Evaluations $\bar{X}$(SD)	%	Elaboration Evaluations $\bar{X}$(SD)	%	Elicitation Evaluations $\bar{X}$(SD)	%	% of Total Phase Evaluations Simple	Elab.	Elicit.
	Introduction	1.64 (3.23)	5.9	1.32 (1.63)	6.7	1.68 (3.12)	7.0	32.3	26.0	33.1
	Presentations	4.28 (6.06)	10.3	3.12 (5.03)	11.1	4.12 (7.16)	10.8	35.0	25.5	33.7
	Guided Practice	3.96 (6.27)	14.4	4.48 (6.49)	25.6	4.84 (6.30)	35.6	29.1	32.9	35.6
Less Effective	Recitation Practice	16.64 (15.52)	60.3	7.96 (6.77)	45.4	11.92 (11.63)	49.5	42.8	20.5	30.7
	Closure	.28 (.61)	1.0	.32 (.63)	1.8	.44 (1.19)	1.8	26.9	30.8	42.3
	Reviews	.96 (1.74)	3.5	.48 (.87)	2.7	1.24 (2.88)	5.2	33.8	16.9	43.7

evaluation form. The results indicated differences in the format of evaluation responses teachers gave student responses during different lesson phases. The findings show more variety in evaluation form used by the more effective teachers during the two practice phases. The more effective group's use of elaboration responses also appeared balanced across Presentations, Guided Practice and Recitation Practice phases. For the less effective teachers, verbal evaluation responses were centered in Recitation Practice and tended to favor simple statements.

Figure 4.23 visually displays these differences as percentages of total verbal evaluations. Similarity in the shape of the profiles for both groups to other areas of findings reinforce the pattern of greater lesson balance shown by the more effective teachers.

These results lend support to the possibility that the more effective teacher group were more sensitive to tailoring their evaluation feedback to the needs of a particular situation during interactions. The trends in the less effective teacher group's profile, seen in Figure 4.23, suggest greater interest in perhaps establishing a smooth, brisk flow to the Recitation Practice phase, evidenced by the sharp rise in the use of simple evaluation forms. It is important to reiterate for interpretation of percentage information, however, that the number of verbal evaluations provided by the more effective teacher group were consistently higher for the average lesson as a whole.

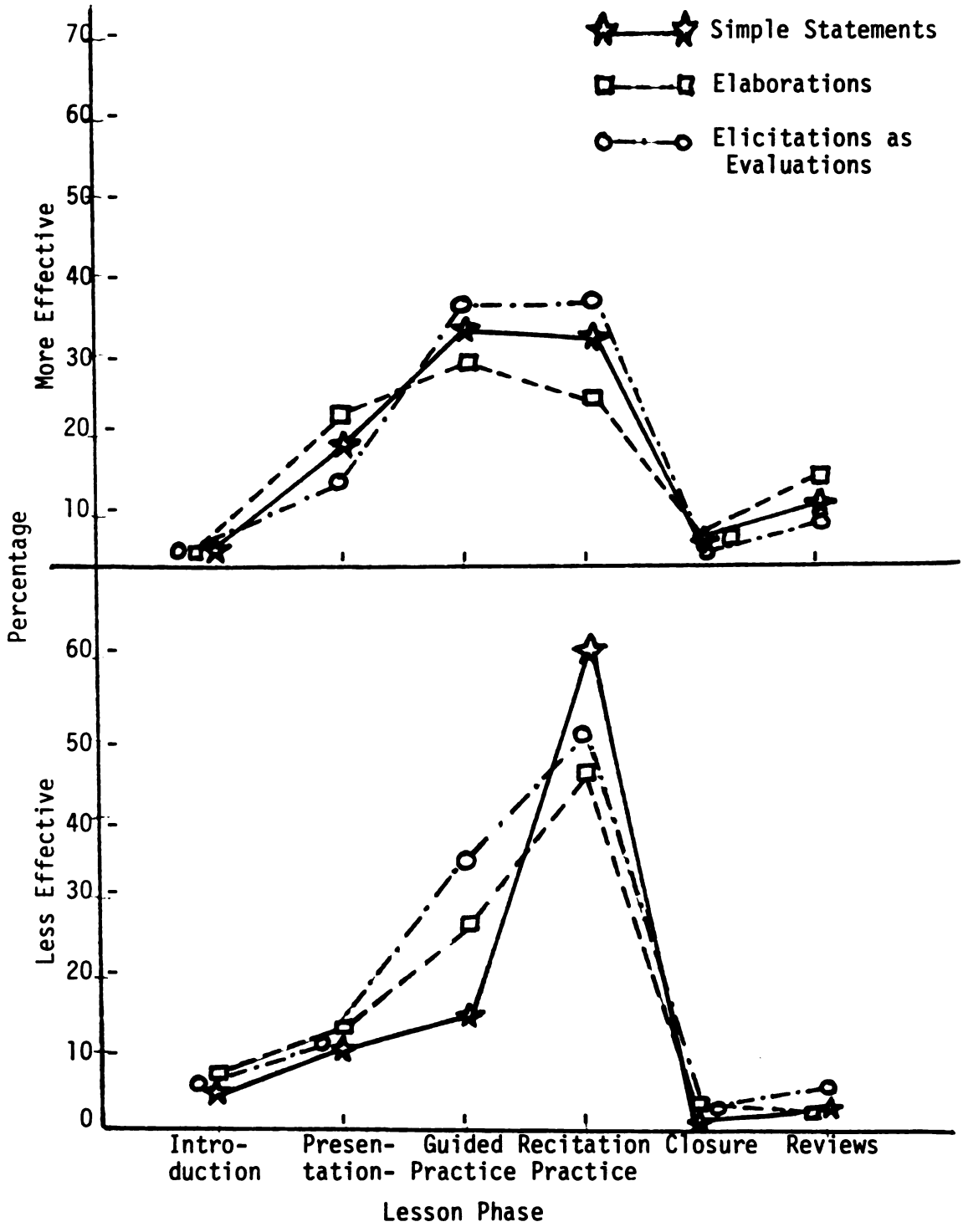


FIGURE 4.23

A Comparison of the Phase Distribution of Evaluation Structural Forms (Simple Statement, Elaboration, and Elicitations as Evaluations) in the More and Less Effective Teacher Groups' Average Lessons

Positioning of Sequences with Different Cognitive Knowledge Type Characteristics

Research Question 3 asked if the lesson phases in the average more and less effective teacher groups' lesson could be distinguished according to differences in cognitive knowledge type (i.e., declarative, procedural, conditional, task procedures). For this analysis, general characterizations of the kind of cognitive knowledge type receiving focus were described for each lesson phase in each teacher's skill lessons. Teacher patterns were then aggregated into group descriptions of the general phase focus within the average more and less effective teacher skill lesson.

Figure 4.24 shows the characterizations of phase knowledge foci for each teacher and the overall characterizations for the average lessons of the more and less effective teacher groups. The results indicate that there were similarities in the kind of cognitive knowledge receiving focus in lesson introductions, closure and recitation practice. Skill lessons typically began and ended with teachers focusing on knowledge about task procedures (D). The teacher-student interactions in the Recitation Practice Phase were generally focused on declarative knowledge (A), reflecting the teacher's assessment of students' ability to use skills to obtain answers to practice examples.

The findings suggest differences between groups in the cognitive knowledge foci of lesson presentations, guided practice and reviews. The lesson presentation in the

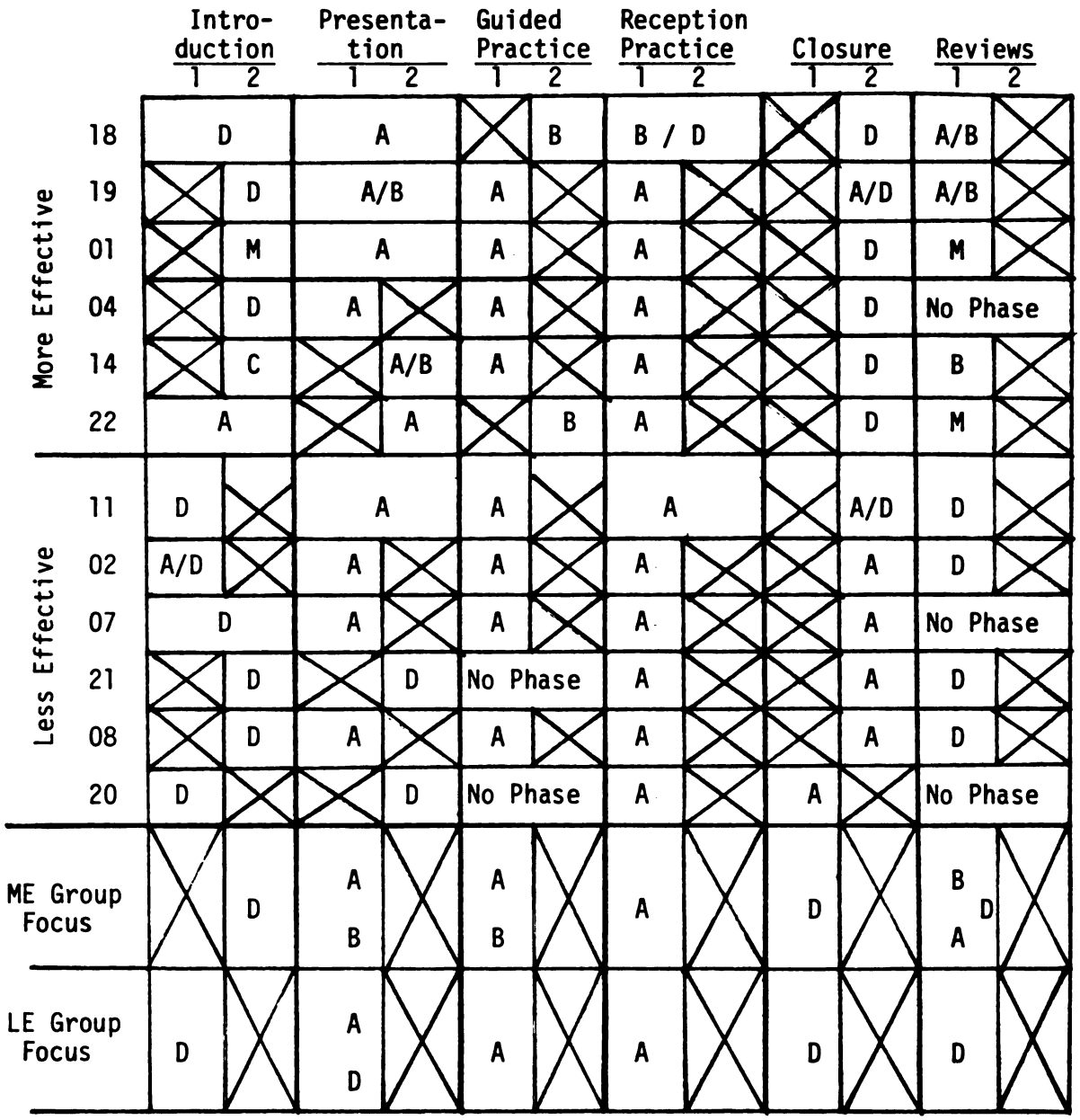


FIGURE 4.24

Description of within Phase Sequence Focus for More and Less Effective Teacher Groups: Instructional Purpose and Cognitive Knowledge Type

average more effective teacher lesson focused on declarative and procedural skill knowledge while the average less effective teacher lesson focused on declarative and task procedure knowledge. The more effective teachers also appeared to structure the Guided Practice Phase to focus on procedural, as well as declarative, skill information. The average Review Phase for the more effective teachers indicated refocusing on declarative, procedural and conditional knowledge about the skill compared to focus on task procedures when the less effective teachers conducted reviews.

Positioning of Sequences with Different Instructional Purpose Characteristics

Research Question 3 asked if there were differences in the characterizations that could be given to various lesson phases on the basis of the perceived instructional purposes of interaction sequences. Figure 4.24 summarizes the phase instructional purpose characterizations as either assessment- or assistance-focused for the average more and less effective teacher groups' lessons. By combining instructional purpose with cognitive knowledge type foci, Figure 4.24 depicts how teachers instructionally processed different kinds of knowledge about skills in different lesson phases.

As would be inferred from the lesson level findings reported in Table 4.9, the results for both groups indicate that the main purpose of elicitations in most lesson phases was assessment. The more effective teacher group did, however, appear to use elicitations for assistance purposes

more often in both Introduction and Presentation phases. When the various subcategories of assessment and assistance were examined to determine the phases in which they occurred most often, the following trends were noted. (1) The more effective teachers used the Review Phase to assess student understanding of strategic skill knowledge. (2) The more effective teachers included interaction sequences in both Guided and Recitation Practice phases in which elicitations were posed in patterns according to how teachers wanted students to reason through skill use to obtain answers to practice examples. (3) Sequences in which teachers used elicitations to guide assistance interactions with students were most often those which were extended because students responded incorrectly. These were scattered throughout all lesson phases, particularly Guided and Recitation Practice.

Summary of Findings for Research Question 3

Research Question 3 compared how the more and less effective teacher groups structured skill lessons into phases and then positioned sequences, elicitations and evaluation elements with the various characteristics of interest to this study within those phases. As clearly shown by the complexity of the tables and figures included in this section and visually illustrated by the lesson profiles constructed for each lesson (see samples in Appendix F), this analysis represented consideration of skill lessons at a level of depth and specificity not tapped when frequency information was aggregated at the overall lesson level.

The results of the positioning analysis will be summarized by highlighting five characterizations of lesson phases for the two teacher groups. Each characterization summarized below integrates patterns in the frequency data reported for the component questions of Research Question 3 with patterns observed during the qualitative profile analysis described in Chapter III.

First, the lessons of all twelve teachers contained distinct lesson sections for teacher-led practice with feedback statements, usually in the second half of each lesson, during which high numbers of elicitations were posed. The six more effective teachers, however, preceded this with a more in-depth opportunity for teacher-assisted practice that included elaborations of how successfully students were using strategies to construct their answers, as well as simple feedback certifying correctness. There was an overall absence of in-depth practice with process elaboration in the lessons of less effective teachers. Interestingly, some of the lessons of several less effective teachers did include a phase identified as Guided Practice but the inclusion of an identifiable phase of this kind lack the consistency shown in the more effective teacher lessons. For the six less effective teachers, elaborations generally consisted of repetitions of student responses, comments on example content and/or restatements of rules and definitions.

Second, the interaction sequences in the Guided Practice and Recitation Practice phases of the lessons of the six more effective teachers were more varied in their functional focus than those of the less effective teachers in four ways:

(a) The more effective teachers appeared to more directly elicit process information about how students were using the skill to answer example items than the less effective teachers. Lengthy extended sequences of questions, student responses and teacher elaborations characterized the guided practice for these teachers. They asked students to explain how they arrived at product answers regardless of whether a given product answer was correct or incorrect, thus communicating accountability for being consciously aware of how to perform the skill.

(b) Another interesting pattern in the Guided Practice interaction sequence data was that the more effective teachers were more likely to initiate extended interaction sequences regardless of correctness or incorrectness of student responses, while extended sequences in the less effective teachers' lessons tended to occur when a student response was incorrect and in need of repair. Extended sequences occurred most often in the lessons of less effective teachers when a student incorrectly responded to a product question. Otherwise, practice interaction sequences tended to be evenly paced series of teacher question-student response-teacher feedback sequences emphasizing the accuracy

of product responses or use of procedures for recording answers.

(c) The teachers in both groups varied the student respondent composition of extended sequences between interactions with a single student and interaction with multiple students. There was some evidence to suggest greater tendency on the part of the six more effective teachers to conduct extended interaction sequences following acceptance of a student's response with that individual student during guided practice, while the extended sequences of the six less effective teachers tended to involve several students per single extended sequence.

(d) The lessons of the more effective teachers contained extended sequences, mainly during presentations and reviews, that focused on the usefulness of the skill in real text reading situations students encountered daily. Teacher questions in these sequences focused students on conditional knowledge about the skill--the kinds of reading experiences they would encounter where knowing how to use the skill would help them solve text blockage problems. The more effective teachers seemed to include sequences reviewing skill usefulness at transition points in the lesson, most often coupled with reviews of important procedural skill information. Questions about skill usefulness were randomly inserted, if at all, in the lessons of the less effective teachers.

Third, the six effective teachers tended to spend the first few minutes of lessons firmly introducing the topic of the lesson and how the lesson would proceed (with minimal questioning of students) compared to later stages of the lesson. They also used this phase to question students about prior skills they had learned which related to the current lesson topic. The less effective teachers typically used introductory time to manage the logistics of distributing materials or locating workbook pages.

Fourth, five of the six more effective teachers included a monologue (or interactive monologue) presentation phase in their lessons in which they modeled a strategy for performing the skill prior to initiating questioning of students. The information about the skill and an explanation of how to do it gave the effective teachers a basis for asking students process questions about how they used the skill for answering practice examples, for posing elicitations in sequences asking how students figured out their answers, and for reiterating key concepts about the skill in elaborations after student responses. Lesson phases for the less effective teachers generally were associated with changes in tasks on worksheets. The focus on prepared practice tasks seemed to influence the content of informational presentations: that is, presentations in the less effective teacher lessons centered around defining skill terms encountered in practice activities or clarifying the task directions associated with practice activities.

Fifth, the more effective teachers appeared to more often initiate reviews, either between phases and/or during lesson closure, of the skill concepts being taught. These reviews were consistently structured as extended interaction sequences and provided the opportunity to refocus students on the skill concepts while assessing understanding usually following guided practice or recitation practice segments, or as part of lesson closure. Review segments were infrequently identified in the lessons of the less effective teachers.

Summary of Chapter IV

The purpose of this chapter was to present the major findings of the study in order to illuminate the role of teacher questioning behaviors during reading instruction, especially that intended to teach reading skills. Kinds of questioning-response-feedback sequences characterizing reading skill lessons were identified and compared for six more effective and six less effective fifth grade teachers of low reading groups. Interaction sequences in twenty-six more effective teachers' skill lessons and twenty-five less effective teachers' lessons were examined to characterize teachers' questioning patterns according to the following: (1) elicitation type (process-, product- or academic procedure-orientation); (2) the informational content focus of sequences, including what the teacher initiated as topic for the sequence as well as the content focus of evaluative

responses to student responses; (3) the instructional sequences' content knowledge orientation--declarative, conditional, and procedural, or knowledge about the skill in terms of "what", "why", and "how to"; (4) the structural organization of instructional sequences, particularly focused on those involving the teachers' verbal interactions with students; (5) the inferred instructional purpose (i.e., assessment or assistance) of elicitations within sequences; and (6) positioning of interaction sequences and component discourse elements within identified skill lesson phases.

Statistical tests of significance were performed on the lesson-level frequency data as a means of examining the strength of differences observed between the two teacher groups. For overall lesson variables, significant differences between groups were found for amount of teacher talk and frequency of evaluations to student responses. Trends toward significance were reported for lesson length (in real time and transcript lines). Differences in overall sequence and elicitation frequencies were not significant. Tests for significant differences between groups on the coded variables indicated that there were strong significant within subjects main effects for categories on the different coded dimensions. There were few statistically significant main effect differences between teacher groups or Group x Category interactions.

There were, however, trends reported for some of the analyses suggesting possible differences given a larger

sample size. Trends were noted in the following areas:

(a) a Group by Category interaction for sequence topical information content;

(b) a Group by Category interaction for the informational content of teachers' evaluations of student responses; and

(c) a between groups main effect for differences in evaluation structural forms.

While frequency data were used to examine the positioning of variables within lesson phases, it was beyond the scope of this study to apply statistical tests for differences at this level of specificity at this time. The phase analysis was successful in pinpointing areas which would be important within-lesson sites for future quantitative analyses of questioning variables. Findings reported for positioning reflected the combined support of frequency information with qualitatively-identified recurring interaction patterns in sequences in the lesson transcripts.

The combined qualitative and quantitative results of the study support the following observations about the role of questioning in low group skill lessons. Questioning seems instructionally more effective when it explicitly focuses on surfacing reading processes and less on academic management concerns.

To be more effective in positively affecting student metacognitive awareness and achievement, it appears that teacher elicitations in interaction sequences are frequent

but multidimensional in terms of content, form and purpose characteristics. The study demonstrated that elicitations appear to take on different lesson functions depending on what the teacher is trying to accomplish within a lesson phase. These data indicated much greater elicitation multidimensionality within the skill lesson's phases of the more effective teachers. This was particularly notable in terms of how they conducted guided practice, recitation practice and periodic reviews.

The transcript analysis of more and less effective teachers' skill lessons revealed characteristics of interaction patterns that converge to suggest that elicitations may be used more effectively as instructional devices when teachers of low reading groups accomplish the following:

(a) combine elicitations with assessment and assistance functions explicitly focused on procedural and conditional knowledge, as well as declarative knowledge of skill information;

(b) directly request student responses that describe information about the skill, its usefulness and its features, as well as show ability to use skill knowledge in practice examples;

(c) follow up requests for correct use of the skill (i.e., product outcomes) with probes directing them to explain those outcomes via strategies used (i.e., process outcomes); and

(d) provide gradually diminishing, structured guidance to students in extended interaction sequences to help then in achieve eventual self-regulation of strategic thinking to use when employing skill knowledge for text-related problem solving.

CHAPTER V

SUMMARY, CONCLUSIONS AND IMPLICATIONS

This dissertation investigated the teacher questioning element of teacher-student instructional interactions in the reading skill lessons of more effective and less effective fifth grade teachers of low reading groups. This chapter summarizes the study; offers conclusions and recommendations about the role of teacher questioning based on the findings; suggests implications for researchers, teacher educators and practitioners; and closes with a final word about questioning.

Summary of the Study

This study was designed to provide greater understanding of the role of teacher questioning during reading instruction. It was based on the premise that teacher questioning has a crucial role in building a concept of instructional interaction that centers on the importance of assisting young readers in developing awareness of themselves as strategists. The goal was to gain insight into the functional role of teacher questioning practices in skill instruction by descriptively comparing the elicitation patterns of interaction sequences in lessons taught by two contrasting teacher groups. The research examined questioning patterns in the context of fifty-one

low-group skill lessons taught by six more effective and six less effective fifth grade teachers.

The twelve teachers selected for this study were chosen from the twenty-two classroom teachers who participated in the Teacher Explanation Study at Michigan State University during the 1982-83 academic year. Criteria for teacher selection consisted of ranked effectiveness in producing student reading achievement growth and awareness of instructional outcomes.

The study used descriptive methods which combined quantitative and qualitative procedures for data collection and analysis to identify and characterize similarities and differences in the characteristics of instructional interaction sequences and their component discourse elements, i.e., teacher elicitations and evaluations. The data examined were prepared transcripts and audiotapes of twenty-six more effective teacher lessons and twenty-five less effective teacher lessons.

Data collected from each teacher's lesson transcripts were analyzed in terms of the overall lesson frequency and lesson phase placement of sequence and discourse elements according to categories developed for informational content, structural form, cognitive knowledge focus, and instructional purpose. The findings for teachers in each effectiveness group were aggregated into an average lesson profile for each group. These profiles were compared using

statistical tests for differences and descriptions of observed qualitative group patterns.

While tests for differences showed few between group significant differences, there were trends in the comparative data approaching significance. Moreover, when quantitative findings were examined in conjunction with group patterns established from qualitative transcript analyses, systematic differences were indicated in how teachers in the two groups conducted skill instruction in terms of sequence positioning within lesson phases, interaction sequence structural formats, and content foci.

Elicitation frequency supported the numerous studies indicating teachers' reliance on questioning during reading lessons. Further, emphasis on eliciting answers to practice examples and responses to academic management questions and directions was high for both groups, particularly for the less effective teachers. However, when frequency was combined with positioning to characterize lesson interactions, potentially important differences in how questioning was used to elicit student responses emerged from the data.

The differences indicate four major areas of findings from the study. First, the phase positioning of sequences with elicitations of different types is a cue to the function of questioning in skill lessons. Second, elicitation sequences, providing practice opportunities to use the skill, were preceded in more effective lessons by an

explicit presentation of information. This presentation was often in the form of a modeled explanation. Third, although assessment is their main instructional purpose, elicitations do perform an assistance role in modeling how to use skills strategically and in redirecting student attention to important skill task features. Assistance of this kind particularly occurs in a guided practice phase following an explicit presentation. Finally, more effective assessment questioning goes beyond declarative knowledge in periodic review phases by focusing on procedural and conditional skill knowledge.

Combined findings indicated that the more effective teachers did the following in their skill lessons:

(1) gave lesson phases more definite focus on the skill being taught by showing planful positioning of elicitation sequences that were structured differentially to serve a variety of assessment and assistance purposes;

(2) elicited many student responses and kept them focused primarily on the intended learning outcome in terms of skill information needed to use the skill as a strategy for solving text-based reading problems;

(3) elicited process information from students following product responses to keep student attention focused on "how to do it" versus simply "getting the correct answer"; these teachers created

opportunities for students to gain procedural, as well as declarative, skill knowledge;

(4) were more likely to extend sequences with individual students following their provision of a correct response to probe for procedural information about how answers were obtained;

(5) involved students in systematic, extended sequences of elicitations, student responses and evaluation, following accepted as well as incorrect responses, which allowed students to verbally practice ways of logically thinking their way through using skills to solve text-based problems;

(6) incorporated periodic review phases to assess student understanding of declarative, procedural and conditional skill knowledge and refocus students' attention on important skill features; and

(7) presented information and reviewed students' conceptualizations of skill usefulness in real reading situations as a way of establishing lesson relevancy.

Conclusions and Recommendations

This section presents the major conclusions drawn from the findings and offers recommendations for further analyses of this kind. Based on the findings described in Chapter IV, conclusions focus on combining those results to

answer the study's major question, "What is the functional role of teacher questioning during reading skill instruction?" General observations about teacher questioning and the success of the study's design in surfacing characteristics of questioning relative to its instructional role are offered.

The findings indicated several areas of distinct and potential differences in how the more effective and less effective teachers used questioning during reading skill lessons when teaching low group readers. These are considered below, first as conclusions based on overall lesson characteristics and then as conclusions based on specific characteristics of sequence discourse elements.

General Lesson Characteristics Related to Teacher Questioning

The first research question investigated overall lesson characteristics (i.e., length measures, amount of teacher talk; frequency of sequences, elicitations and evaluations) for similarities and differences between the more effective and less effective teacher groups. The results indicate support for the conclusions repeatedly reached by other researchers (e.g., Durkin, 1978-79; Duffy & McIntyre, 1982; Guszak, 1967; Hare & Pulliam, 1980) that teachers question frequently during reading lessons. This appears to apply to skill lessons, as well as story comprehension lessons. The comparison of mean sequence and elicitation frequencies for the two groups did not reach significance although the more

effective teachers elicited student responses more often in slightly less numbers of instructional sequences.

When sequence and elicitation frequency data are compared to lesson length information, both in terms of average timed lesson length and number of lesson transcript lines, it appears that there is "something" going on in the lessons of the more effective teachers that indicates differences in discourse patterns. The higher mean number of elicitations posed by the more effective teachers could be viewed as logical given the longer average lesson length as compared to the less effective teacher group. Yet the data showed that the less effective teachers engaged students in more instructional sequences despite shorter lessons and less teacher talk. This suggests that the more effective teachers engaged students in more sustained interactions for processing particular topical information during the lesson.

The significant difference between groups in frequency of evaluation elements may be the most visible indicator of more sustained teacher-student interactions in lesson sequences. The more effective teachers were more verbal in terms of supplying feedback to student responses to elicitations in extended sequences.

Evidence available in the findings related to general lesson characteristics suggests that even at a global level there may be noteworthy indicators of how teachers conduct their skill instruction. Useful global metrics in this study were elicitations and sequences per minute,

elicitations per transcript line and per line of teacher talk, and elicitations per sequence. Additionally, the importance of considering "both ends" of the teacher talk in interactions--i.e., evaluations as well as elicitations, as components of questioning behaviors in sequences received support at the overall lesson level. Simply viewing questioning in terms of overall elicitation frequency was not, however, sufficient to characterize between group differences.

Descriptive Dimensions of Sequences and Component Discourse Elements Related to Teacher Questioning

The second major question investigated by this research compared the sequences, elicitations and evaluation elements in the average skill lessons of the two teacher groups on several descriptive dimensions. The third major question explored the placement of sequences, elicitations and evaluations with different characteristics within the lesson phase structure. The purpose here was to obtain information that could be combined to characterize teacher questioning in terms of aspects related to the following: (1) how elicitations were structurally combined to produce interaction sequences; (2) the kinds of content information conveyed through elicitations during those sequences; and (3) how the nature of the instructional activity being pursued by the teacher, through elicitations during an interaction sequence positioned during a particular phase of

the lesson, might potentially affect messages communicated to student participants about reading skills.

The results of the analyses for kinds of elicitations showed a significant main effect for categorical differences. Although several categories of elicitations were "hidden" in the Other category, the four elicitation types selected for investigation seemed to capture similarities and differences in skill lesson elicitation use by teachers in the two groups.

Product elicitations were by far most often employed by teachers in both groups--a finding that supports the emphasis attributed to lower levels of questions found in prior studies (Durkin, 1978-79; Guszak, 1967). The high rate of academic management elicitations supports Duffy & McIntyre's (1982) observation that direction-giving is a prevalent role for questioning in reading lessons. The more effective group's lesser emphasis on academic management seemed to be counter balanced by a trend for greater inclusion of process and usefulness elicitations in lessons.

The inclusion of the last two kinds of elicitations added important variety to the more effective teachers' questioning repertoire in terms of signalling to students additional aspects of skill knowledge that were important. Interestingly, the qualitative patterns of information stressed by the more effective teacher group in various lesson phases indicated that the use of process and usefulness elicitations was more likely if the teacher modeled

procedures for how to use the skill during the Presentation phase(s) of the lesson. Process elicitations were often employed as follow-ups to product questions during practice phases and often directly used to elicit student explanations of how to perform skill strategies during review phases. Usefulness elicitations seemed to stand out in interaction sequences devoted exclusively to assessing students' understanding of the relevancy of skill information to their own reading.

Despite proportionally small numbers of these elicitations in more effective teacher lessons, it remains to be seen how many is "enough" to allow adequate attention to procedural and conditional knowledge about reading skills. Some teachers in the less effective group did employ process questioning, but on an intermittent basis. Although not systematically investigated by this study, the kinds of responses less effective teachers received from students to process elicitations were "right answer" oriented. Perhaps the expectations established over time for responding to teacher elicitations that vary from established patterns is not easily accomplished without repeated exposure that creates new response expectations. As noted by Dillon (1982a), cognitive correspondence between teacher questions and student responses cannot be assumed.

Usefulness elicitations were the elicitation type that distinguished the two teacher groups for its presence or absence. Although the need to include conditional

information about reading skills is receiving current theoretical attention (cf., Duffy & Roehler, et. al., 1986b; Johnston, 1985; Paris, et al., 1983; Winne, 1985), how this is can be most effectively done in reading lessons remains to be firmly established. In these lessons, it appears that addressing usefulness through elicitations, which actively involve students in thinking of relevant situations in their own experiences for skill use, was an important means of justification for why it was worth it to pay attention during the lesson.

The topical information content analyses (for both overall sequence and evaluation element content) suggest that use of a broader variety of elicitation types was associated with greater overall explicit content focus on skill information versus the kind of indirect skill content focus implied through conducting practice with examples. Perhaps more importantly, it appears that even when the more effective teachers elicited responses focused on answers to practice examples, there was a trend in their evaluations to explicitly redirect student attention to skill information in addition to certifying correctness of the student's ability to demonstrate skill use. This was particularly likely if the teacher had previously provided an explicit presentation about how to perform the skill (i.e., procedural knowledge). This finding suggests that one role of teacher elicitations may be to set up opportunities in lessons subsequent to explicit presentations in order to

provide reinforcement, elaborating information about how to perform skills. In this sense, elicitations may be the major mediator in the gradual transfer of responsibility (Pearson, 1984) for procedural knowledge from teacher to students.

Additionally, in terms of the structural form of evaluations, both teacher groups were roughly even in their use of elicitations as feedback in the form of probes for more information. The qualitative analysis of patterns suggested that these probes often served as substitutes for what would otherwise be negative feedback when a student answered incorrectly or inappropriately. Thus, although often neutral in content, elicitations as evaluations were usually clear signals to students that they had somehow "missed the mark."

When the results obtained for sequence structural form are figured in to the differential characterization of interaction sequences for the two teacher groups, it is possible to understand how content foci would influence the structuring of teacher-student interaction sequences. The findings of the structural form analysis were strongly suggestive of systematic differences between teacher groups and support qualitative patterns observed in the data that show the more effective teachers extending interactions beyond answers to practice examples to assess student understanding of how those answers were procedurally obtained. In these situations probes for skill-process

information tended to follow example-product elicitations in extended sequences. Farrar (1983) also observed that aspects of question form in literature lessons seem to affect sequence length. How patterns of elicitation types that might be associated with particular sequence forms appears to offer another site for follow-up research.

A teacher's plan to focus student attention on skill information throughout the lesson would seem to necessitate increased use of sequence extensions beyond the basic three-part interaction form. This conclusion seems to be borne out in the trend shown by the more effective teachers to extend interactions following acceptance of a student's response, as well as when responses were not accepted.

The finding that teachers in both groups favored sequence extensions involving multiple student participants is probably more reflective of the need to sustain the active involvement of all group members in the lesson for management reasons. Interestingly, single student extensions were most prevalent for both groups during the Recitation Practice phase--that point in the lesson where rhythmic lesson pacing had typically been established because there was greater likelihood that students would respond correctly to practice examples. At this point, extending sequences with a single student would not be as costly in terms of time and attention as it appeared to be when extensions followed incorrect responses. Clearly, teachers face trade-offs during skill lessons between allowing individuals

opportunities to demonstrate understanding and maintaining group attention. This study supports the need for additional study in the area of extended interaction sequences in lesson practice phases.

The picture of skill instruction questioning practices that begins to emerge after accounting for sequence informational content and structural form, coupled with elicitation types, suggests two prevalent patterns to teacher-student interaction. On the one hand, the less effective teachers relied more on product elicitations to establish smooth pacing during answer recitation. In fact, the practice of "telegraphing" elicitations (i.e., communicating elicitation content by simply calling a student by name or verbally signalling elicitations with rising intonation on a single word) after response expectations were established was a device found with greater regularity in less effective teachers' lessons. In these lessons, incorrect student responses requiring sequence extensions were clearly disruptive of lesson flow.

While the more effective teachers also employed the recitation format to cover large numbers of practice examples efficiently, the transition between teacher-guided practice and recitation practice was less clear-cut. The reason for this seemed to lie in the kinds of elaborated evaluations favored by the more effective teachers. Recitations were regularly preceded by irregularly paced, extended interactions that showed more overt guidance in

understanding how answers were obtained. Recitations in the more effective teacher group's lessons were also mixed with extensions initiated by teachers following correct student responses, as well as when incorrect student responses required extensions for answer clarification. When extensions were initiated by these teachers following correct responses, the content focus of evaluations seemed to shift from the informational content of the practice example to skill information. For example, if a practice example in a main idea lesson focused on animals that hibernate, the teacher's evaluative comment would focus on some aspect of information about finding main ideas rather than on hibernating animals.

Rosenshine (1983) noted that the inclusion of "guided practice" was an important attribute of effective skill instruction. His description of what constitutes guidance, however, corresponded to what was identified in this study as recitation--i.e., fast-paced eliciting of correct student responses. From the evidence provided by this study, it appears that there are subtle nuances that distinguish teacher guidance during skill practice that warrant further investigation. Simply telling teachers to provide guided practice does not clarify what effective guidance might entail especially when they must resolve the instructional tension created by trying to balance smoothly-paced interactions with opportunities for in-depth student responses.

Regarding the analysis of instructional purpose categories, the findings overall clearly supported assessment as a primary role of teacher questioning in skill lessons. The breakdown of assessment and assistance purposes into distinctive subcategories suggested two patterns of differences between how teachers in the more and less effective groups fulfilled those purposes when eliciting responses from students.

First, the findings suggest that the more effective teachers do more in their instructional assessment than simply monitor students' ability to produce correct answers to example items or memorized definitions of skill terms. They also directly assess students' abilities to explain how they used skill information to get those answers. In other words, the more effective teachers in this study appeared equally interested in assessing students' procedural knowledge, as well as declarative knowledge.

In the context of teacher-student interactions, one must consider how the topics chosen by teachers for assessment may in fact provide a form of instructional assistance by conveying to students information about what the teacher sees as important about learning reading skills. Although certainly an indirect form of assistance, teacher elicitations seemed to communicate important focusing information to students about what they should be listening to when the teacher presents information or elaborates upon student responses. This finding is consistent with Wixson's (1983b)

findings about questioning in text-based comprehension lessons.

In these data, there was a great deal of consistency observed among teachers in both groups in terms of the focus of their explanatory monologues and the kind of information they subsequently assessed. The less effective teachers focused monologue sequences on defining terms, as well as the logistics of academic task management. Their elicitations subsequently supported these foci by assessing students' memory for definitions and knowledge of how to complete independent practice tasks. The more effective teachers focused monologue sequence content on procedural and conditional information about skills and then assessed students' ability to not only use that information, but to explain how they used it. These teachers appeared interested in gauging their success at transferring both kinds of skill knowledge by directly assessing student awareness.

Second, the patterns of differences between the two teacher groups in assistance categories encourage speculation about when teacher questioning provides students with assistance. For both groups the largest single use of elicitations for assistance was in the area of directing students in how to complete tasks and practice activities. The more effective teachers also provided small amounts of assistance through elicitations in two additional ways. They helped bring to awareness students' prior knowledge of

skill information in preparation for acquiring new information during the lesson. And they arranged elicitations during guided practice in an order that matched their explanation of information about how to perform the skill. The kind of assistance provided by teachers who registered sequences in the latter category was use of elicitations as a model students could follow to develop a systematic, self-questioning strategy for how to perform skills independently. Evidence for this conclusion is provided by teachers' elaborations during these interactions which translated student product responses into characterizations of the process they demonstrated to obtain those answers.

The findings from this study indicate that disentangling the assessment and assistance roles of teacher questioning is not easy. The issue of teacher intentionality clearly is a factor here--one not addressed within the scope of the present research. Nevertheless, this study identified a number of different ways that both more and less effective teachers used elicitations for assistance, as well as assessment. The instructional uses of elicitations are not cleanly categorized into compartments of isolated function (Heap, 1982). While this study attempted to explore multifunctionality by characterizing multiple dimensions of discourse elements, much work clearly remains to be done in developing research procedures for this purpose. For example, it is likely that to really get at

aspects of multifunctionality, use of video-taped lesson records would allow greater examination of the nonverbal behaviors accompanying teacher questioning (Erickson & Shultz, 1982).

Importantly, the sequence, rather than the individual elicitation, conveyed instructional function in this study. Mehan's (1979a) characterization of the basic, simple three-part sequence unit provided a helpful starting point for this investigation, and the results of this study basically supported its use in skill lessons, particularly in assessment-focused recitations. However, in the lessons analyzed here, extended sequences were structurally distinct forms of interaction where elicitations and evaluation elements worked together to do more than string simple sequences together. Sequence extensions were the structural form needed for elicitations to provide assistance focused on the processes of skill use. An important next step in this research will be to identify and analyze simple and extended sequences in other kinds of reading lessons and compare them to the kinds of sequence patterns observed here for skill lessons.

<u>Summary of Conclusions Regarding the Role of Teacher Questioning in Low Group Reading Skill Lessons</u>

Based on the results of this investigation, the following list synthesizes the conclusions about roles of questioning during low-group skill lessons. These characterizations primarily reflect the combined importance

of positioning and instructional purpose when distinguishing more from less effective skill instruction.

In low group skill instruction, teacher questioning

- --conveys and reinforces important lesson content;
- --communicates expectations for acceptable responses;
- --establishes routines for practice;
- --structures practice;
- --focuses student attention on salient information about reading skills;
- --conveys a model for self-questioning;
- --sets up meaningful opportunities for elaborating student responses;
- --softens negative teacher criticism of incorrect student responses;
- --assesses student understanding as well as correct answers;
- --mediates the transfer of responsibility for procedural and conditional skill knowledge;
- --establishes across lesson phases a "lesson history" that either communicates to students "I'm here to help you and then let you try it" or "I'm here to test you and see what you know".

In other words, teacher questioning has many roles that can contribute importantly to the provision of more effective skill instruction. In this study, the more effective teachers demonstrated that to develop students who are strategists when they read requires teachers who are strategists when they use questions.

Implications

In this study, the roles of teacher questioning during reading skill instruction highlight the complexity of effective questioning behaviors during instructional episodes in reading. The findings suggest implications for researchers, and teacher educators and teachers.

For Researchers

This study has two major implications for researchers interested in investigations of instructional processes in reading.

First, this study demonstrates that researchers need to be careful in generalizing the role of teacher questioning behaviors in reading instruction across types of lessons. The classification systems developed and used to study teacher questioning during story-based comprehension lessons focus on describing cognitive levels of content extracted from the text. This represents a different task orientation than that intended in skill lessons.

By definition, skill lessons intend for teachers to more directly and selectively teach readers the process information related to the many skills needed to read text successfully. Elicitations function to allow for students' demonstrations of understanding of how a particular skill works and how to manipulate it in a variety of structured examples. Rarely are these kinds of lessons conducted within the context of a single, unified piece of text.

Rather, the object is to provide the learner with multiple and varied practice opportunities to directly manipulate a reading skill prior to text application. When used effectively, teachers' elicitations in skill lessons can facilitate student access to procedural, declarative and conditional information about the component skills of reading. When taught effectively, skill lessons present unique opportunities to directly help students become consciously aware of how they perform the skills they use when reading continuous text and how to use skills as strategies for solving comprehension problems.

Thus, while ultimately both kinds of lessons are designed to promote better reading comprehension, they use teacher questioning in distinctly different ways. It is important that researchers be able to characterize those differences as precisely as possible to better understand how skill lessons and story-based lessons work together in classroom reading instruction.

At a more practical level, instructional researchers within the reading research community need to acknowledge that, regardless of whether they are preferred as the means of teaching students the intricacies of reading processes, skill lessons appear to be here to stay--particularly for low group readers. Much as the basal story lesson format has become the ritualistic group lesson for average and above average readers, so has the isolated skills lesson become the ritualistic group lesson for low group readers.

At present these lessons function as settings where teachers use questioning mostly to monitor answers to workbook practice exercises. An on-going focus of reading research should be to better understand the pedagogy of skill instruction with an eye toward designing lessons to better serve low group readers by incorporating questioning that encourages cognitive mediation.

Second, researchers interested in understanding how instructional interactions promote student learning should broaden the commonly accepted definition of the term, "question," from interrogatives to include the variety of linguistic discourse forms used by teachers to elicit responses from students during instructional interactions. This would allow instructional processes research to better characterize the role of questioning as it occurs for actual teachers in naturally occurring classroom situations. Broadening classroom questioning to include declarative and imperative, as well as interrogative, discourse structures when examining elicitations would allow for greater flexibility in considering the functions of the possible variations of teacher question-student response-teacher feedback extended sequences. Teasing out the multiple functions of interaction sequences would aid in refining and sharpening conceptions of what constitutes assessment versus assistance questioning during instruction.

Broadening definitions has methodological implications, however. Modifications in how lesson data for questioning

studies are collected and analyzed continue to be problematic. At present the study of classroom questioning seems to be an either/or proposition in terms of choosing between the use of quantitative collection and analysis methods with larger teacher samples and the use of more contextually sensitive qualitative methods with limited numbers of teachers. This study tried to demonstrate how aspects from both sides of the methodological coin could be used together to simultaneously consider frequency, content and positioning factors of questioning practices for a moderately-sized teacher sample. The results suggest that adaptations of the sociolinguistic, ethnographic methodological models developed by Mehan (1979a) and others (e.g., Erickson & Shultz, 1982; Green & Wallat, 1981) for studying classroom interactions cam be made which allow for study of larger sample sizes than those traditionally associated with ethnographic research.

For Teacher Educators and Teachers

In the area of teacher education and teaching, this study provides comparisons of how teachers, selected on the basis of their effectiveness in promoting growth in student reading achievement and awareness, differentially used elicitations to conduct instructional interactions when the outcome is acquisitions of basic skills. The findings suggest that there are important context-specific influences that necessitate caution in recommending prescriptions for better questioning based on recent process-product findings

(Rosenshine & Stevens, 1985). While elicitation frequency may be important, the differences between the two teacher groups in terms of sequence content foci and phase positioning indicate that there are many subtle, qualitative complexities to teacher questioning that temper the deceptive simplicity of implementing more effective instructional practices. Four implications of these findings for teacher education and classroom practices are offered.

First, rather than focusing on training perspective and in-service teachers to ask both higher and lower level cognitive questions, teacher educators should be assisting teachers in monitoring the overall sequences of elicitations and responses they construct in interactions with students. The lesson profiles of the more effective teachers in this study suggested teacher awareness of what Guthrie (1985) referred to as lesson "orchestration" in terms of having a "plan" for how skill lessons could accomplish goals related to the gradual transfer of responsibility for skill knowledge from teacher to student. In the lessons of these teachers, interaction sequences with different content foci, positioned in different lesson phases, seemed to be more balanced to serve diverse instructional purposes. Creating heightened teacher awareness of how to be instructionally strategic in the positioning of their elicitations in lessons and within sequences seems to be an important complement to asking lots of questions.

Second, prospective teachers need to be educated to effectively combine assessment and assistance roles for questioning, as well as to use elicitations to assess for strategic understanding, as well as correct answers. They should be encouraged to broaden their conceptions about what kind of student outcomes are desirable in reading skill instruction and be shown how to organize extended interaction sequences with students that integrate product, process and academic management elements. These findings suggest that more effective teachers do use questioning to assist students in making links between their prior knowledge of how skills are used and new information presented in the lesson.

Third, university courses in reading for pre-service teachers should include instruction in how to task analyze reading skills to develop strategies that are process focused, and then develop kinds of questions that will be successful in surfacing those strategies once they are taught. Strategy-centered reviews, using elicitations to direct student thinking about their role as active rather than passive readers, appear to be an important component of an effective skill lesson based of the findings of this study. Reviews, when interspersed with guided practice opportunities to use the skill, can help teachers sustain the lesson focus on important skill information. Learning how to place interactive reviews in lessons would assist teachers in developing an understanding of how their

questioning behaviors help establish student accountability for thinking about skills and how to use them.

Finally, the importance of eliciting responses from children that encourage extended verbalizations (rather than single word answers) should be stressed in preparing teachers to provide strategy instruction in reading. All questions ask for answers. Thoughtful answers can be provided, but only if a relevant schema exists, is rich enough, and can be accessed. In the case of low group readers, all three conditions are problematic. They may not have a schema, or the schema may be narrow or inaccurate. If they do possess the appropriate schema, they may not be aware of how to access it in the service of problem-solving. Both situations place responsibility on the teacher to provide assistance in the form of explicit verbal guidance to help students learn new information or develop process skills which can be used as needed to acquire knowledge from text. The content and extent of that assistance is, in part, determined by what the teacher finds out about the state of students' existing schema through assessment. Thus, it follows that lesson effectiveness can be improved through the orchestrated interplay of instructional assistance and assessment.

Developing more effective questioning patterns in reading lessons is one way to serve both of these components. This study represents a start in one promising direction in which research can move to enhance knowledge

and understanding of the instructional role of teacher questioning behaviors.

A Final Word

This dissertation was undertaken to investigate whether teacher questioning in reading instructional interactions consists merely of assessing informational content. The findings suggest it is unlikely that readers (particularly low group readers) learn to make sense out of text solely by interactions that assess their ability to recall passage content or that focus on the accuracy of their answers in practice materials.

The results of this study indicate that questioning patterns associated with more effective skill instruction involve much more than eliciting accurate answers to practice examples. In particular, more effective instructional assessment involves three elements--namely, determining students' awareness of <u>what</u> cognitive skills they are employing, <u>how</u> they are employing these skills, and <u>why</u>.

Despite the predominance of assessment questioning, the evidence suggests that more effective teachers position elicitations, strategically, in the flow of instructional interactions, to assist students' acquisition of procedural knowledge. More effective teachers thus help students become more metacognitively aware of skill knowledge--which leads to improved comprehension. In sum, findings from this

research support a view of effective instruction such that teacher elicitations function as pedagogical devices to both directly and indirectly assist as well as assess student learning.

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THE FUNCTIONAL ROLE OF TEACHER ELICITATIONS IN INSTRUCTIONAL SEQUENCE INTERACTIONS DURING THE LOW GROUP READING SKILL LESSONS OF MORE EFFECTIVE AND LESS EFFECTIVE FIFTH GRADE TEACHERS

VOLUME II: APPENDICES

By

Linda Gire Vavrus

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
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DOCTOR OF PHILOSOPHY

Department of Teacher Education

1987

APPENDICES

APPENDIX 3A

FORM FOR TYPED REFORMATTED TRANSCRIPTION OF LESSONS

This form was used to reformat standard audiotaped transcripts. It is based on the Initiation-Reply-Evaluation format developed by Mehan (1979) to depict classroom interactions.

APPENDIX 3A

FORM FOR TYPED REFORMATTED TRANSCRIPTION OF LESSONS

READING SKILL LESSON: Date_____ Tchr._____ Trans.#_____

Skill Topic:_____ Page_____

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
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APPENDIX 3B

SAMPLE DATA SET

(Lesson 18R4, Main Idea)

This Appendix includes materials from the data set for Lesson 18R4, "Main Idea," in the following order:

APPENDIX 3B.1

Reformatted Transcript

(Lesson 18R4, Main Idea)

READING SKILL LESSON: Date 2-25-83 — 34 sequences (1.06 SPM) — Tchr. 18 — Trans. # 18R4

Skill Topic: Main Idea — TOTAL TIME: 32:10 (32.17) — Page 1

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
		Ss: (background noise, getting settled)		STC-2 EIC-1 SFC-EIds KTC-B IPC-7
:10	T: Okay. Today we are going to continue what we've been doing all week. WHAT SUBJECT HAVE WE BEEN WORKING ON ALL WEEK, JENNIFER? (1)			
		S: / NR / (1)	PrR	
:20	T: FIGURING OUT HOW TO FIND WHAT? / WHO CAN TELL ME WHAT WE'VE BEEN WORKING ON ALL WEEK LONG? / (1) JIM?			
		S: (inaudible) (1)	PrR	
:26	T: WHAT'S THE NAME OF THAT? WHAT HAVE WE BEEN TRYING TO DO ALL WEEK LONG?			
:30 (12)		Ss: / NR /	NC T: We've been figuring how to find the main idea. ALRIGHT?	
:36	T: WOULD YOU PLEASE PUT A ROMAN NUMERAL ONE ON YOUR PAPER? / (8) (writes on board) This is our subject today. Main idea. We have // we're going to learn about finding out what the main idea in a paragraph is. This is probably one of the hardest things for us to learn / OKAY? // NOW I WANT YOU TO (15) THINK. SEE IF YOU CAN TELL ME WHAT WE ALREADY KNOW ABOUT THE MAIN IDEA. BRENDA. (10s)	Ss: (sound of rustling papers)		
:45				
13 TL				
7 T				(RED LINE)
1:02				
1:07				
		S: That when you're reading a paragraph (inaudible).	PR T: Alright, what Brenda is saying to you is that some paragraphs list the main idea in a sentence.	
1:32				
(67)				

READING SKILL LESSON: Date 2-25-83 Tchr. 18 Trans.# 18R4

Skill Topic: Main Idea Page 2

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
1:44	T: SHE SAID WHAT YOU LOOK AT FIRST IS WHAT, ELAINE? (3)	S: The first sentence.	PR T: The first sentence.	STIC - 2 EIC - 1 SFC - EAds KTC - A IPC - 7
1:51	T: IF IT'S NOT THERE, WHAT'S THE NEXT PLACE YOU LOOK, TROY? (3)	S: mid...the last sentence. S: Oh, I know!	PR T: The last sentence.	
2:00	T: IF IT'S NOT THERE, WHERE DO YOU LOOK? (3)	S: In the middle.		
2:07	T: WHERE IS IT MOST OFTEN? JUAN? (1)	S: At the beginning.	PE T: At the beginning. Most often, but not always. /	2
2:11	T: Okay, so what we know about the main idea is that sometimes, not always, sometimes the main idea,			STIC - 2 EIC - SFC - TMs KTC - A IPC - 9
2:22	(6) COPY THIS PLEASE / (writes on board) "sometimes the main idea is listed in a sentence." (slow)			
2:37	// Okay, and then we have said where to look first, where to look second, where to look third. /pauses/ IS THERE ANYTHING			
2:57	ELSE WE KNOW ABOUT THE MAIN IDEA? (10s)			
	(70) (15) WHILE YOU WIRTE, THINK ABOUT IT. I'll give you some time to write. /(pause - about 10 sec.)/	S: (copying)		
2:57-3:14	(reads) "Sometimes the main idea is listed in a sentence in that paragarph."/			3
3:21	Okay, there's another thing that we know. //			
3:29	ARE MAIN IDEAS ALWAYS LISTED IN THE SENTENCE? (10s)	Ss: (unison) No.	PE T: No, they're not. Some are.	

Interaction Presentation

3B.1-2

READING SKILL LESSON: Date 2-25-83 Tchr. 18 Trans.# 18R4

Skill Topic: Main Idea Page 3

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
1 3:33	(25)		That's another thing we know. We know that sometimes the main idea is not listed in the sentence. It's kind of the opposite. /	STIC -2 EK - 1 SFC - 53 4 KTC - A IPC - 7
2 3:36				
3				
4 4TL				
5 3T	(6)			
6 3:46	T: Okay. WRITE THIS DOWN (writes on board) "Sometimes the main idea is not listed in a sentence" (reads slowly as she writes). /(pause-17 seconds)/	Ss: (copying)		STIC-4 SFC-TMS 5 KTC-A IPC-9
8 (12) 2TL				
9 2T				
10 3:58				
11 4:15	Those are the two things we know. WHICH ONE OF THESE HAVE WE BEEN USING MOST OF THE TIME? (10s)	Ss (inaudible responses)	T: WE'VE BEEN DOING A, HAVEN'T WE? (12) Esc T We've been drilling, drilling, drilling on finding the sentence that states the main idea. PE	STIC-2 EIC-1 SFC-EAds KTC-B IPC-7 6
12 4:19				
13				
14				
15 (20)				
16				
17		Ss: Ummm...		
18				
19 6TL				
20 6T				
21 4:35	S: You forgot the other period (inaudible)	T: I forgot the period.	T: I'm glad you guys are paying attention to punctuation. That's important, real important. Thank you, Dana. PE	SQ STIC-4 EIC-4 SFC-53 7 KTC-D IPC-12
22				
23				
24 (8)				
25				
26				
27 4TL				
28 3T				
29 4:43	T: Okay. / Today we are going to concentrate on this one (points to second sentence on board). On paragraphs that do not state the main idea in a sentence. That's what we're going to do today. WE KNOW HOW TO FIND IT IF IT'S LISTED, DON'T WE? / Today we're going to concentrate on what if it's not there. HOW DO WE DO IT? / That's what	rhetorical		STIC-2 SFC-TM KTC-D IPC-9
30				
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34				
35 (41)		(14)		
36				
37				
38				
39 5:09				

READING SKILL LESSON: Date 2-25-83 Tchr. 18 Trans.# 18R4

Skill Topic: Main Idea Page 4

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
	we're going to do. / OKAY? /	Put a star beside it because that tells you what it is that we're up to today. Sometimes the main idea is not listed in the sentence. OKAY?		STIC - 2 EIC - 1 SFC - EAds KTC - B IPC - 2
5:30	WHO CAN TELL ME, THINK IT THROUGH NOW, WHO CAN TELL ME HOW TO FIND THE MAIN IDEA IF THERE IS A SENTENCE LISTED?			
5:43	WHAT DO YOU DO? WHAT DO YOU DO? YES?	S: You read it over.	T: You read it first.	
5:50	T: WHAT'S THE SECOND THING YOU DO?	S: Sit back and look it over.	T: Sit back and look it over	
	T: AND WHAT? AND THINK.	S: what's the main idea.	T: WHAT'S THE PARAGRAPH ABOUT, RIGHT?	
		S: Right.		
6:02	T: WHAT'S THE THIRD THING YOU DO? DISHELLE?	S: You look.		
6:07	T: WHERE DO YOU LOOK?	S: At the first sentence.	T: You look at the first sentence and see if that's it.	
6:12	T: THEN WHAT'S THE SECOND THING YOU DO? LAMON?	S: (inaudible)	T: Look at the (inaudible).	
6:16	T: WHAT'S THE THIRD THING YOU DO?	S: (softly) ...middle.	T: You look in the middle. And you choose. That's how you do A. If the sentence is listed.	
6:24	T: BUT WHAT IF IT'S NOT LISTED? WHAT IF YOU GO THROUGH THIS WHOLE THING AND YOU SAY, "Well, there			

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Skill Topic: Main Idea Page 5

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
	isn't a sentence there"? (rhetorical)			
6:29 6:32	WHAT DO YOU DO? / Let's put the steps up here on the board to let you realize there are two things going on. Sometimes it's not going to be listed.			
6:40	WHAT'S THE FIRST THING YOU DO, ROXANNE? (3)	S: (inaudible)	NPr	
6:47	T: You have a paragraph. You want to find the main idea. WHAT'S THE FIRST THING YOU DO? (3)	S: Read it over.	PR	
			T: You still have to read carefully. / Okay. You read the paragraph carefully.	
7:03	T: SONIA, WHAT WOULD BE THE SECOND THING THAT YOU DO? (3)	S: (inaudible)	NE	
			T: That's not a sentence. Okay, I'll put an 'it' in there, and then we'll be a sentence, then I'll put a period in it. "Read it carefully." Period. Don't worry. YOU CAN SNEAK IT IN AND SQUEEZE IT IN LIKE I HAVE, OKAY? / Boys and girls, I'm not collecting these note pages from you, so it isn't a matter of.../ these are notes for you. To keep in your folder to refer to in our future discussions. Troy does. He has his handy. (6)	(related to copy task)
7:21				
7:39	T: Okay, first thing you do is you read it carefully. KIM, WHAT DO YOU SUPPOSE THE SECOND THING			10 (cont'd)

IT 3

3B.1-5

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Skill Topic: Main Idea Page 6

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
	YOU DO? (3)	S: Look it over.	T: Look it over PR	
	T: AND THINK ABOUT... (3)	S: The main idea.	PrM	
		S: What's it about.	PR	
7:51			T: What it's about. Okay. The second thing we do is sit back and think what the paragraph is about (writing as she speaks). OKAY? (14)	
8:16			Alright. THAT'S EXACTLY WHAT WE DO FOR A, ISN'T IT? (12)	
		Ss: Yes.		
		Ss: Umhum...	T: Yes, it is. // ISN'T IT? Okay. (9)	
8:30	T: WHAT DO YOU SUPPOSE I DO THEN? / Mmmm-hummm? (3)	S: Look for the first /	PE	
8:40			T: I would go through and say, 'let's see if there's a sentence that states the main idea. So that would be the third step: (writes on board) "Look for a sentence that states the main idea."	
9:04	T: EXACTLY THE WAY I DO THE OTHER ONE, ISN'T IT? (12)	S: You forgot...	NE	
9:12			T: I'm not done yet. Okay. However. this goes one step further. / I'll wait 'til you're done copying 'cause I'm getting ahead of you, I think. //	
9:20				
9:25	T: Alright. I can say that again. When you get done copying, THINK WHAT THIS NEXT STEP MIGHT			
9:36		(15)		10 (cont'd.)

3B.1-6

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Skill Topic: Main Idea Page 7

	Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
1	9:49	BE. / / DANIELLE, WHAT DO YOU	(8)		
2		THINK I DO NOW? I don't find		PrR	STIC-2
3		a sentence. AM I GOING TO GO			EIC-1
4		"OH, MY GOSH?" (10s)			SFC-EIds
5			Ss: Noooo		KTC-B
6	9:57	T: WHAT AM I GOING TO DO?		NE	IPC-5
7		R	S: Look at the end.		
8				T: There is no sentence there	
9				that tells you the main	
10				idea.	
11			S: You can make one up yourself.	P	
12				T: Alright. There it is./OKAY?	
13	10:10	(T.A. Interruption - 9 seconds)			
14					
15	10:19	T: Okay. If, if the main idea is			
16		not listed, then you sit back,			
17		you've done the sit back and		Elaboration	
18	(4:26)	think what the paragraph's		to wrap sequence	
19		about, you can't find a sentence			
20		that states the main idea, so			
21	50T+	you do what Dishelle has			
22	36T	suggested. We've got to make			
23		onecup to fit it. Okay.			
24				(12)	
25	10:47			T: THIS IS HARD, ISN'T IT?	
26				This is harder than finding	
27				the sentence.	10
28	10:50	T: (writes on board) "If the			
29		main idea /			STIC-2
30			S: I already got that part.		SFC-TMS
31		isn't listed try to choose one			KTC-B
32	11:14	yourself." Most often, most			IPC-9
33	(53)	often, the people asking you			
34		to find out what the main idea			
35		is give you a list and you can			
36	5TC	choose from that list the main	(14)		
37	4T	idea. / OKAY? ...Choose one			
38	11:43	yourself. / Now. I'll give you	(8)		11
39		a minute more to get that copied			

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Skill Topic: Main Idea Page 8

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
12:01 (20) 7TL 4T	/(pause—25 seconds)/ T: (to individual) That's just , I just started to write... ARE YOU READY FOR ME TO START WITH THE (6)	Ss: (unison and urgent) Nooo! S: Yes. S: No!	NE T: Alright. Those of you who are questioning this C thing, this is an outline. A, B and C item is over here. It should be right under the B. But I don't have enough room. I think you do.	STIC - 4 EIC - 3 SFC - S3 KTC - D IPC - 10 12
12:21 12:26 (24) 12:38 6TL 4T	T: The next question I have...we know what we're talking about. WHAT ARE WE TALKING ABOUT? (1) TROY?	S: About the sentence... Ss: Umhum...	T: Right. The main idea. AND HOW TO FIND IT, RIGHT? / (12) WE KNOW BECAUSE IT'S LISTED HERE, WE KNOW HOW TO DO IT, DON'T WE? (14) Okay.	STIC - 2 EIC - 1 SFC - EAds KTC - A IPC - 1 13
12:45 13:10 (60) II B	T: The third thing...WHEN ARE WE GOING TO USE THIS SKILL? WHEN (5) IS SOMEONE GOING TO SAY TO YOU AND EXPECT YOU TO KNOW HOW TO FIND THE MIAN IDEA? WHEN? (5)	S: (inaudible) S: When we're reading.	(8) PrR (11) T: SAY IT AGAIN. WHEN YOU WHAT? PE T: Alright. When you are reading anything, but mostly when you're reading for information. When you're	

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Skill Topic: Main Idea Page 9

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
			reading a storybook nobody's going to say, read that paragraph and tell me the main idea. But they're going to all the time...	STC-2 EIC-1 SFC-53 KTC-C IPC-9
13:24 13:26	[P.A. Announcement]		They're going to all the time if you have a textbook. They'll say read pages 100-103 and answer these questions, and if you can use this skill to find the main idea, it'll be easier for you. Alright. /	
13:35 13:55	T: (writes on board) When to use this skill. AND THEN PUT A DASH. And Kelly told us, "use it when reading	(8)		14
		T: I. It doesn't matter. JUST COPY IT. (8)	S: You forgot to dot the i.	
14:12	T: "Use it when reading (writes on board as she speaks) a textbook"/ TO ANSWER WHAT? (1)			
14:25	T: WHAT QUESTIONS? Or, this is when you get older, you're doing some reports for right now.	S: Questions. (1)		
14:33	WHAT ARE YOU DOING? WHAT ARE YOU DOING, DISHELLE? (10W)	S: (inaudible)	NE T: (inaudible) I heard somebody say they had three pages done already.	
101		S: Reports.	PE T: They're making reports. They're making reports on black history. And boys and	
14:49				
14:55				

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Skill Topic: Main idea Page 10

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
			girls, if you use this skill, you don't have to copy word for word for word for word from a book. You can read carefully, sit back and think what it's about and then write down your information. / OKAY? When reading a textbook to answer questions or make, making (writing on board) a report.	STIC-2 EIC-1 SFC-EIds KTC-C IPC-9 15
15:26	T: Okay. That's all I'm going to ask you to write today./ We know what it is we're studying. We know how to use it. And we know when we're going to use it. Now that is not to say that you're reading teacher won't ask you to read a story, a fiction story from your book and ask questions, RIGHT? (12)	Ss: Mmmm...	PE T: Most often you will use this skill when you are answering questions on a textbook or making a report. There's no (inaudible.).	STIC-2 EIC-1 SFC-S3 KTC-B IPC-9 K (RED LINE)
16:08	T: Now we are going to practice what we've been preaching ...for a week. Now, what I'm going to do / is give you a piece of paper that has some paragraphs on it. And I'm going to ask, we're going to read it together. We're going to practice...I"M NOT DONE.. we're going to practice what we've been preaching and see	S: Uh-oh!		

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Skill Topic: Main Idea | Page 11

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
6TL 6T	how we do. Then I have some fun exercises for you to practice on after that. /(pauses to pass out papers0/	Ss: (background talking and paper shuffling)		STIC-4 SFC-TM KTC-D 17
17:20 (12) 4TL 3T	T: Okay. IS THERE ANYONE WHO DID NOT RECEIVE ONE OF THESE?	S: (someone gets up) S: No, it is.	NPr T: JIM, IF IT'S AN EMERGENCY, YES. IF NOT... (9) T: Okay.	STIC-4 EIC-3 SFC-53 18 KTC-D IPC-12
17:32 (20) 7TL 4T	T: WRITE YOUR NAME AT THE TOP OF THE PAPER. (8) IS THERE ANYONE ELSE WHO DID NOT GET ONE? (12) T: CRYSTAL, DID YOU GET ONE? (8) T: RICHARD? (8)	Ss: (A few raise hands) S: (inaudible) S: (inaudible)	T: NO? (11) N T: Man...	STIC-4 EIC-3 SFC-EAds KTC-D IPC-10 19
17:52 18:02 18:17 18:20 18:30 (76)	T: Okay, I'm not asking you to do these by yourself. In a minute you'll be by yourself. Right now, I want to do these with you and go over with you how to do them. Number one. (reads) "Crickets don't make chirping sounds with their voices. They just rub their legs together. It looks like they are (inaudible). //It looks like they are playing the violin." I have done number one. I've read it carefully. Now I sit back and say to myself, 'well, what is this about?' THIS IS ABOUT CRICKETS		model embedded in G.P. — not done in separate presentation	

Guided Practice III IV

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Skill Topic: Main idea Page 12

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
	AND HOW THEY WHAT? (1)	S: Chirp.	PE T: Chirp. And how they make sounds.	STC-3 EIC-2 SFC-TMS KTC-B IPC-9
18:33	T: Then I look and I see crickets don't make chirping sounds with their voices. Then I look at the last one. It looks like they are playing the violin. They just rub their wings together. / There's no sentence			
18:45	that stateees the main idea, so I choose from the ones that they've listed. (reads) How chirping is chirped. Wings that won't fly. Or A violin			
18:57	that chirps. WHICH OF THOSE STATES IT FOR US SINCE THERE IS NO SENTENCE? KIM? (1)			
17T4 15T		S: How chirpers chirp.	PR T: How chirpers chirp.	20
19:08	T: LOOK AT NUMBER TWO. TURN (9) AROUND PLEASE, DANNY. /			
19:11	(reads) "The boo-boo is an animal that lives in a sea of boo-boos. He has sixteen legs, three arms and a tail that looks like a fan. He likes hamburgers best of all. He told me so. Oh, yes, the boo-			
19:28	boo can talk, too." Then I say, okay, 'what is this about?' ALRIGHT, THIS IS ABOUT A FUNNY ANIMAL CALLED THE... (1)			
19:40		Ss: (unison) Boo-boo.	PR T: Boo-boo. Okay. This is about a funny animal called the boo-boo. /	
(72)				

3B.1-12

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Skill Topic: Main Idea Page 13

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
	T: Let's see...I look at the first sentence. "The boo-boo is an animal that lives near the sea." No. / The last one. "Oh, yes, the boo-boo can talk too." No. Now look in the middle. It just tells me what he looks like and what he likes. No sentence that states the main	rhetorical		STIC-3 EIC-2 SFC-TMS KTC-B IPC-9
19:59	idea, so...WHAT DO I DO? / I do number four. If the main idea isn't listed, I try to choose one for myself, and they give them to you. (reads) A very funny animal. The Sea boo-boo. And The animal that			
20:13	eats spam. WHICH ONE IS THE			
16T	MAIN IDEA OF THIS PARAGRAPH? (1)	S: A.	PR T: A very funny animal. Okay.	21
14T				
20:20	T: Number three. (reads) "How do you know fall is coming? I can tell because my mom takes my bathing suit and puts it in a box. Outside the air is getting colder and next week I go back to school. These are some of the			
20:40	signs of fall." OKAY, GUYS. (15)			
20:43	FIRST STEP. TELL ME WHAT YOU WOULD DO TO FIND THE MAIN IDEA. (3)	Ss: /NR/		STIC-3 EIC-1 SFC EAss KTC-B IPC-5
20:52	T: FIRST, BEFORE I LOOK AT ANY SENTENCES, WHAT AM I GOING TO DO? (3)	S: Sit back and think about it.	PR T: Sit back and think to yourself what this paragraph is about.	
(47)				
21:01	T: WHAT IT'S ABOUT, CHRIS? (1)			

3B.1-13

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Skill Topic: Main Idea Page 14

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
1 10TL		S: It's about fall.		22
2 7T			T: Okay.	
3 21:07	T: NOW IF I LOOK DO I FIND MAIN			STIC - 2
4	IDEAS IN THE SENTENCES? (1)		P	EIC - 1
5		S: No.		
6			T: Not really.	SFC - EAss
7 21:15	SO WHAT STATEMENT UNDER THE PRAR-			
8	GRAPH WILL TELL YOU THE MAIN			KTC - A
9	IDEA? (inaudible name) (1)		PR	IPC - 2
10 (20)		S: A.		
11			T: A. How to tell when it's	
12			fall. THAT'S SIMPLE, TOO,	
13			ISN'T IT? (14)	
14 8TL		S: Yeah.		
15 5T	(8)		T: Okay. P	23
16 21:27	T: DAMON, THIS NEXT ONE IS YOUR.			
17	YOU'RE GOING TO TELL US HOW			
18	YOU WOULD DO IT, OKAY? / (3)			
19	(reads) "Do you have some ice,			
20	do you have some cream of			
21	giraffe soup here? My friend			
22	eats it all the time. That			
23	is how he got to be so tall.			
24	I need to get very big by next			
25	Thursday. Cowboy Joe is coming			
26	to town and he needs someone			
27	to rope horses for him. You			
28	need to be tall to do that."			
29				
30 21:49	THE FIRST THING YOU'RE GOING TO			
31	DO. TELL US WHAT YOU'D DO.			
32	(3)	S: Read it over carefully.	PE	
33			T: Okay. We just did that.	
34		S: (inaudible)	NE	
35			T: uh-oh. I don't look at the	
36			first sentence.	
37		S: Oh, look back at it and see	PE	
38		what the main idea is.		
39 22:03			T: Alright. DON'T FORGET THAT,	

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Skill Topic: Main Idea Page 15

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
			BOYS AND GIRLS. If you don't take that step of stopping to think what this thing is about, you've lost it all. You've got to sit back and say, 'this is about what?'	
		S: Joe. (callouts)		
		S: Why I need to grow tall.	PE	
22.29			T: Okay. It's...okay. Why I need to grow tall. He's already chosen the main idea.	STIC-3 EIC-1
22.32	T: DID YOU FIND THERE WERE NO SENTENCES THAT STATED IT? (1)			SFQ-EI33
(135)		S: Uhhh. Yes.	PE	KTC-B
			T: Okay. He has told you why I need to grow tall is the main idea.	IPC-3
Phase 9 1TL 10T 22.48	T: WHY DO YOU NEED TO GROW TALL, DAMON? (1)	S: Because Cowboy Joe is coming to town and he needs somebody to rope his horses.	PE	
			T: Very good. Alright. Boys and girls, what we seem to be doing here is forgetting to sit back and look to see what the main idea is. DON'T FORGET THAT. That's important.	24
23TL 16T				
23.02	T: Okay, I have one more set, and then I'm going to put you on your own.			SQ
(6)				STIC-4 EIC-4 SFQ-33
28.04	S: We're gonna do the bottom?			
3TL 2T		T: No, we're not going to bother with the bottom.		
23.02	/(pauses to pass out papers- 25 seconds)/		T: Shhhh (inaudible name) (9)	25 KTC-D IPC-D
		Ss: (talking and rustling papers)		

3B.1-15

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Skill Topic: Main Idea Page 16

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
23:33 23:39 (31) STL 2T	T: Okay. // This'll take us about two minutes. PUT YOUR NAME (8) ROXANNA, ON THE PAPER FIRST. WHERE ARE THE REST OF THESE, (8) JAY? // DAVE?	Ss: (general noise) S: (inaudible)		STIC-4 SFC-TMS KTC-D IPC-11 26
24:04 24:22	T: Okay. JIM, THIS ONE'S GOING TO BE FOR YOU. / (reads) "If you want to learn to do something well, you have to work hard and practice all the time. Now Dorothy Hamill was working with learning to skate or when Dorothy Hamill was learning to skate, she practiced seven hours a day and even longer on week-ends." WHAT ARE YOU GOING TO DO TO FIND THE MAIN IDEA? (3)	S: Go back in and read over the sentences.	N T: Unh-unh.	
24:32	T: WHAT ARE YOU GOING TO DO FIRST? (3)	S: Oooooohh! S: The main idea (inaudible)	PRR T: Alright, sit back and think about what the main idea is. (9) EXCUSE ME, LADIES . AND GENTLEMEN. You don't seem to be tuned in to what's going on. JASON? / (9) I just read it carefully. Then I go back and sit back and think what it's about.	
24:39 24:44 24:51 (133)	T: JIM, WHAT DO I DO NEXT? (3)	S: Ooo-oo S: / Look at / (inaudible)	PR T: I look at, for the sentence that states the main idea.	

II Recitation Practice

READING SKILL LESSON: Date 2-25-83 Tchr. 18 Trans.# 18R4

Skill Topic: Main Idea Page 17

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
25:04	T: ARE THERE ANY THERE? (1)	S: Yes.	T: Um-hum. P	STIC - 3
25:15	T: WHICH ONE? (1)	S: //The middle.	PE T: The middle. "When Dorothy Hamill was learning to skate, she practiced seven hours a day and even longer on weekends.	EIC - 1 SFQ - EADs KTC - B IPC - 3
25:37	T: DOES THAT TELL YOU WHAT THE WHOLE PARAGRAPH WAS ABOUT? (1)	S: No.		
25:40	T: WHAT DOES, WAYNE? (1)	S: The first one (inaudible)	PE T: Alright. "If you want to learn to do something well, you have to work to practice all the...	
25:48		S: (inaudible)	PE T: I thought I saw (inaudible). You'll have to learn to practice all the time.	
25:57	T: IF YOU LOOK AT THE BOTTOM, CAN YOU FIND ONE THAT STATES IT? (1) THEY GIVE YOU A CHOICE?	S: Yeah. (inaudible)	PE T: How to do something well. Wayne, I'm proud of you. He identified there was a main idea and from that sentence he could make his choice. Good for you.	
32 T 21 T				27
26:11	T: Number two. (reads) The first time you hear your own voice on the tape, you might be very surprised. You probably won't even know it's you. The			

3B.1-17

READING SKILL LESSON: Date 2-25-83 Tchr. 18 Trans.# 18R4

Skill Topic: Main Idea Page 18

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
	you hear from your voice when you talk is different from the sound your friends hear!" (4)			
26:33	UHHH, RICHARD, DO THAT. WHAT'S			
26:37	THE FIRST THING I'M GOING TO DO? (3)			
		S: (inaudible)	N T: Noooo.	
26:42	T: THE FIRST THING I'M GOING TO DO. KIM? (3)		PrR	
		S: You've to think what the paragraph's about.		STIC-3 EIC-2 SFC-EIds KTC-A IPC-3
26:56	T: WHAT IS IT ABOUT, RICH? (1)		T: EXCUSE ME, GIRLS. //	
		S: It's about hearing yourself on the tape.		
(19)	T: WHICH ONE OF THESE WOULD FIT IT? (1)			
		S: Talking on a tape.	T: Talking on a tape. The sound of your voice, hearing friends talking. DO YOU AGREE THAT IT'S TALKING ON A TAPE? (12)	Esct
21:20				
		Ss: Nooo.		
Phase: 5GTL 3TT	T: WHICH ONE DO YOU THINK IT IS? (1)	S: B.	PE	
			T: The sound of your voice. Because the whole main idea, Richard, here, is the sound of your own voice on the tape is very different from... okay. (9)	28 (Red line)
18TL 12T				
27:36	T: Before we stop, I want to ask you something. WHAT DID WE STUDY TODAY? (1)			STIC-2 EIC-1 SFC-33A 29 KTC-A IPC-2
27:41				
3TL 2T	(15)	S: Main idea.	PR T: How to find the main idea.	

3B.1-18

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Skill Topic: Main Idea Page 19

	Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
1	27:51	T: MICHAEL, WHEN DO I USE FINDING			
2		THE MAIN IDEA? (5)			
3			S: When you're reading a text-		
4			book and you have to answer		
5			questions?	PR	
6				T: When you're reading and you	
7				have to answer questions.	STIC - 2
8	28:01	T: KIM, WHAT'S ANOTHER TIME? (5)		PM	ER - 1
9			S: (inaudible)	NR	SFC - EAds
10				T: Jeff said that. When you	
11				have a textbook and you have	KTC - C
12				to answer questions.	IPC - 2
13	28:11	T: CHAD, WHAT HAVEN'T WE SAID? (5)			
14			S: I don't know.		
15	(49)	T: RICHIE? (5)		AR	
16			S: When you're making a report.	PR	
17	28:20	T: CAN I USE IT ANY OTHER TIME? (5)		T: Or when you're making a report.	
18			S: Yeah.		
19				PE	
20	28:24			T: Yeah. These are the ones	
21		13 TL		when somebody's going to say	
22		8T		to you, here, do it. And	
23				that's what you'll have to do. 30	
24	29:30	T: Okay. TELL ME HOW TO DO IT. (3)			
25	28:35	UMMM, WHAT'S THE FIRST THING			
26		I DO? Let me see...LUANN? (3)			
27		THE FIRST THING I DO.			
28			S: Read the paragraph.	PR	
29				T: Read the paragraph.	
30	28:44	T: BILL, JIM, WHAT'S THE SECOND			
31		THING I DO? (3)			
32			S: Look at the first sentence.	NR	
33				T: Nooo.	
34			S: Oh-oh! I know!		
35				T: I thought you'd remember	
36				after that.	
37	28:57	T: MIKE. (3)			
38			S: Sit back and think over what		
39					

READING SKILL LESSON: Date 2-25-83 Tchr. 18 Trans.# 18R4

Skill Topic: Main Idea Page 20

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
		the paragraph's about.	T: Sit back and think what the paragraph's about. PR	STIC-2 EIC-1 SFC-EIds KTC-B IPC-2
29:02	T: CRYSTAL, THEN WHAT DO YOU DO? (3)	S: Look at the first one.		
(45)	WHAT IF THE SENTENCE IS NOT LISTED? (3)	S: Then you make one yourself.	T: Try and make up one yourself. And choose from what is given. Okay. / PE	31 (red line)
14T+ 8T				
29:15	T: Now. I am going to give you some fun things.	Ss: (Excited reaction)		
		S: Alright! (15)		STIC-4 EIC-1 SFC-THS KTC-D IPC-11
29:26	T: NOW LISTEN TO ME FIRST, JIM. I have some cards here... on all kinds of sports figures	Ss: Uh-oh... S: Oh, yeah!	T: PLEASE, DAMON (9) N	
(95)	T: ...and on the back of one of these papers you can write the answers. JUST THE ANSWERS, NOT THE LETTER OF THE ANSWER, OKAY? / There's Julius Erving, Bill Rogers, and all that...	(6)		
30:36	WHAT DO YOU SUPPOSE YOU'RE GOING TO BE READING FOR IN THESE? (1)	Ss: Main ideas.	T: The main idea. Okay. / PR	32
11T+ 7T				SQ
30:40	T: Now.			
	S: What do we do with these. Miss H?	T: Just a minute...		
30:49	T: A second...DAVE? JENNIFER?... that you have to choose from is...the world of entertainers. They've got Lamarr Burton, Shawn Cassidy, John Travolta (64)	(15) Ss: (mixed positive and negative		

3B.1-20

READING SKILL LESSON: Date 2-25-83 Tchr. 18 Trans.# 18R4

Skill Topic: Main Idea Page 21

Time	Initiation	Reply	Evaluation and/or Elaboration	Comments
	Henry Winkler. DO YOU KNOW WHO THAT IS?	responses to the names)		STIC-3 EIC-4 SFC-TMS KTC-D IPC.6
		Ss: (unison) Yeah.	T: The Ponz.	
	T: Mark Hamil. Okay. HOLD IT. MICHELLE, WHY DON'T YOU GO WITH Dr. D. FIRST?	Ss: (quite a bit of talking)	T: EXCUSE ME. I don't begin until you're ready to listen. BRENDA?...SHHH //	33
31:44	T: What I think I'll do is give you the paper that you want by the way. / WHAT'S THE FIRST THING YOU'RE GOING TO DO? (8)			STIC-4 EIC-3 SFC-TMS KTC-D IPC-11
31:55		S: Read it.	T: Read it. PR	
(26)	T: THEN YOU TURN IT OVER ON THE BACK AND YOU ANSWER THE QUESTIONS. AND DO YOU WRITE DOWN THE WHOLE ANSWER? (8)			
32:07 Page 28TL 18T		Ss: Noooo.		
	T: WHAT DO YOU WRITE DOWN? (8)	Ss: (several talking at once, sounds that group is beginning to move around)		34
32:10 8TL 5T				

3B.1-21

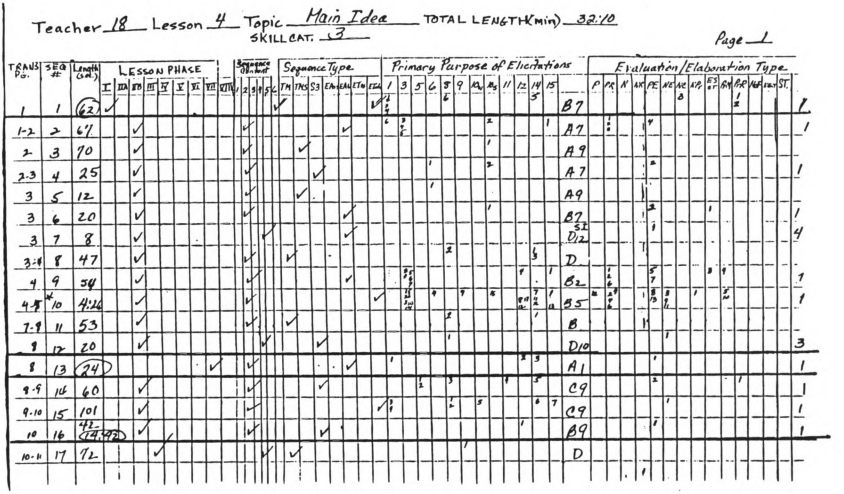
APPENDIX 3B.2

Sample Completed Lesson Map

(Lesson 18R4, Main Idea)

APPENDIX 3B.2

SAMPLE COMPLETED LESSON MAP



Teacher 18 Lesson 4 Topic Main Idea TOTAL LENGTH (min) 32:10
SKILL CAT. 3

Page 2

TRANS PG.	SEQ #	Length (sec.)	Lesson Phase I	IIA	IIB	III	IV	V	VI	VII	VIII	Sequence Content 1	2	3	4	5	C	Sequence Type TM	TMS	S3	EAb	EAM	ETb	ELL
11	18	12				✓									✓					✓				
11	19	20				✓									✓							✓		
11-12	20	76				✓									✓				✓					
12-13	21	72				✓									✓				✓					
13-14	22	47				✓									✓						✓			
14	23	20				✓							✓								✓			
14	24	135 (6:54)				✓									✓								✓	
15	25	6					✓									✓				✓				
15-16	P 26	25 31					✓									✓		✓						
16-17	27	133					✓								✓							✓		
17-18	28	79 (4:30)					✓								✓								✓	
18	29	15								✓				✓							✓			
18-19	30	49								✓				✓								✓		
19-20	31	45 (1:35)								✓				✓										✓
20	32	85							✓							✓				✓				4
20-21	33	64							✓						✓					✓				
21	34	26 (3:55)							✓							✓				✓				

SEQ #	Primary Purpose of Elicitations 1	3	5	6	8	9	10N	Ms	11	12	14	15		Evaluation/Elaboration Type P	PR	N'	AK	PE	N'E	NE	NPr	ES/OT	RM	PrR	NP	ERT	ST	
18					1	2							D12								1							3
19					1 3 5				4	2			D12			2					1							3
20	1 2												B9		2			1										2
21	3 4					2						1	B9		1 2													2
22	4	2 3										1	B5	2	1													1
23	1 2										3		A2	1 3	2													1
24	5 6	4 3			1							4	B3					1 3	5 2									1
25						1							D SQ															
26					1 2								D															
27	6 9 7 8	2 5			1 10	3 4							B3	5	4	1		3 8 6 9 7						2				1
28	5 7	2 3			1	4 8				6			A3			1		5				4	3	2				2
29	1												A2			1												1
30			15 64										C2		1		3	5					2		4			1
31		14 2 35											B2		1		2	4							3			1
32					3	2						1	D11		2	1												1
33						3 4	2					1	D6 SQ		1				2									4
34					1 2 3								D11		1													3

APPENDIX 3B.3

Sample Worksheet for Elicitation Types, Sequence Structural Form, and Sequence Topical Information Content

(Lesson 18R4, Main Idea)

APPENDIX 3B.3

SAMPLE WORKSHEET FOR ELICITATION TYPES, SEQUENCE STRUCTURAL FORM, AND SEQUENCE TOPICAL INFORMATION CONTENT

Teacher 18R4
Topic Main Idea
Skill Cat. 3

	Intro	Present A	Present B	Guided Practice	Recitation	Closure	Review	TOTAL
TOTAL SEQUENCES	1		14	8	4	3	4	34
TM			2	1	1			4
TMS			2	2		3		7
S3			3	1	1		1	6
EAss				2				2
EAds			4	1	1		2	8
EIss				1	1			2
EIds	1		2			1	1	4
TOTAL ELICITATIONS	6		52	26	20	9	13	126
#1 Product	4		3	9	6	1	2	25
3 Process			13	4	4		5	26
5. Usefulness			2				6	8
6. Info Manage			3					3
8. Task Procedures	1		6	4	5	4		20
9. Behavior Man.			1	3	4	3		11
10W - Experience Gen						1		1
10S - Experience Sk.			6					6
11. Clarification			1	1				2
12. Verification			5	1	1			7
14. Check understdg.	1		8	1				10
15. Direct Attention			4	3				7
LENGTH (Time in min.)	1:03		14.7	6.9	4.57	3.92	2.05	32.17
SEQUENCE CONTENT								
1. Background								
2. Skill Content			12	1		1	4	17
3. Use with Examples				4	2	1		7
4. Task directions			2	3	2	2		9
5. Student Behavior								
6. Repeat prior content	1							1

APPENDIX 3B.4

Sample Evaluation Elements Worksheet

(Lesson 18R4, Main Idea)

APPENDIX 3B.4

SAMPLE EVALUATION ELEMENTS WORKSHEET

Teacher 18R4
Topic Main Idea
skillCat 3

Evaluation/Elaboration

	Intro	Pres		GP	RP	CI	Rev	TOTAL
		A	B					
Pos. Eval			11	8	2	3	3	27
Neg. Eval.				1	2	1	2	6
Pos Elab			10	5	6		2	23
Neg Elab	1		5	1		1		8
Elicits Eval			2		1			3
Probe info	-		4	2	1		1	8
Probe repeat	2		1		2			5
No feedback							2	2
Neutral								
TOTALS	3		33	17	14	5	10	82
Pos+Negeval	-		11	9	4	4	5	33
Pos+Neg elab	1		15	6	6	1	2	31
Tot elicit fdbk	2		7	2	4		1	16

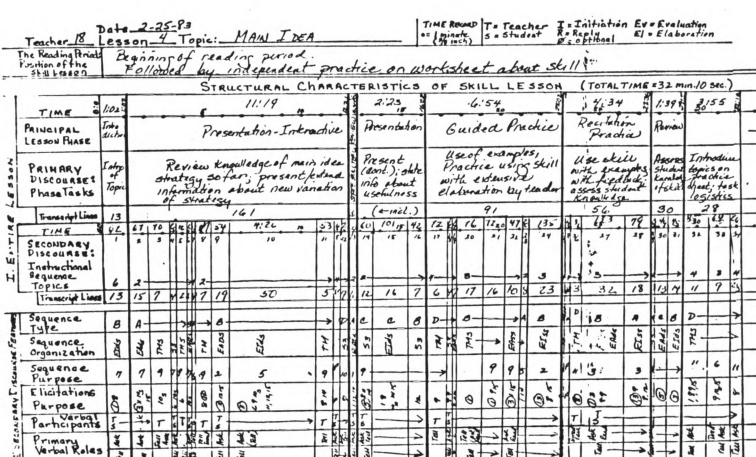
APPENDIX 3B.5

Sample Visual Lesson Profile

(Lesson 18R4, Main Idea)

APPENDIX 3B.5

SAMPLE VISUAL LESSON PROFILE



APPENDIX 3C

SAMPLE LESSON LENGTH RECORD FORM

This form was used to record lesson and
phase length in transcript lines and real time (minutes).

APPENDIX 3C

SAMPLE LESSON LENGTH RECORD FORM

Teacher _____
ME LE

	Lesson Length							
		Presentation						
	Introduction	Mono.	Int. Mono.	Guided Practice	Recitation	Closure	Review	Total
#1 Total Transcript Lines Teacher Transcript Lines Time (minutes/seconds)								
#2 Total Transcript Lines Teacher Transcript Lines Time (minutes/seconds)								
#3 Total Transcript Lines Teacher Transcript Lines Time (minutes/seconds)								
#4 Total Transcript Lines Teacher Transcript Lines Time (minutes/seconds)								
#5 Total Transcript Lines Teacher Transcript Lines Time (minutes/seconds)								

APPENDIX 3D

EXAMPLE SEQUENCES FROM LESSON TRANSCRIPTS TO ILLUSTRATE CLASSIFICATION CODES

APPENDIX 3D.1

Example Interaction Sequences Illustrating Elicitation and Evaluation Codes

Sequence Examples show application of Elicitation and Evaluation Codes (Data Analysis Steps 1 and 2). Four examples are provided.

Appendix 3D.1

Example Interaction Sequences illustrating Elicitation and Evaluation Codes

The following series of example interaction sequences taken from skill lessons on prefixes and suffixes illustrates how two coding schemes were used to describe elicitations and fevaluation elements. The focus here is on illustrating the kinds of elicitations and feedback that were of major interest in this analysis. Other types were, however, identified as noted.

Examples are presented in the reformatted transcript style to show how sequences were constructed in terms of initiations, replies and evaluations. The codes from Tables 3.6 and 3.7 are listed in the column to the right of the text, positioned next to the text element being described. Additionally, the phase, sequence ordering, and start-end times of the sequence example in the lesson are provided.

Example One. In her lesson on using suffixes to determine word meaning, Teacher 01 focuses student attention (E-15) then elicits product information (E-1) about the use of this skill. She evaluates the student response by providing single-word positive certification (FB-P) followed by a product elicitation (E-1) probing for additional information (FB-PrM) about the meaning of the suffixed word. She positively certifies the student's response to the probe by repeating (FB-PR) and elaborating

(FB-PE) how the answer was obtained.

Example One: (Guided Practice, SEQ. 12, TEP, 01R3, 2-23-83)

Initiation	Reply	Evaluation	Comment
6:52			
T: LET'S GO DOWN TO THE NEXT ONE. This is kind of hazy down there.			E-15
BUT SUPPOSE YOU HAD -LY ADDED TO A BASE WORD, JASON?			E-1
	S: Greatly.		
		T: Yes.	FB-P
T: WHAT DOES THAT MEAN?			E-1
	S: In a way that is.		
		T: In a way that is. Alright, suppose we take the word, the base word and add -ly. So therefore greatly would mean, 'in a way that is great. / -ly added on. /	FB-PR FB-PE
7:24			

Example Two. Product elicitations also initiate requests for information about the skill. In a lesson on using prefixes to determine word meaning, Teacher 02 elicits product information about the skill topic. She responds to the student's incorrect reply with negative prompts (FB-NPr) and directs the bounds of acceptable reponse behavior with the rest of the class (E-8). She repeats the question (E-1, FB-NPr) to a new student after focusing student attention (E-15) on the definition. Her elaboration (FB-PE) reinforces the response she seeks.

Example Two: (Review, SEQ. 28, TEP 02R3, 2-22-83)

Initiation	Reply	Evaluation	Comment
15:55 T: ALRIGHT, FOR THE LAST TIME TODAY WHERE DO WE FIND PREFIXES, MISS ANN R.?			E-1
	S: /Long pause/		
		T: TAKE A DEEP BREATH I KNOW YOU KNOW.// (To class) PUT YOUR HANDS DOWN, PLEASE? Let's give Ann a chance.	FB-NPr E-8
	S: At the end of a word.		
		T: Oh my goodness. IF WE FOUND PRE-FIXES AT THE END OF A WORD, WHERE ON EARTH WOULD WE FIND A SUFFIX, ANN?	FB-N E-1 FB-NPr
	S: /NR/		
		T: You are telling the class that we find a prefix at the end.	FB-NR
T: LOOK AT THE DEFINITION, CLASS. FROM THE DEFINITION, WHERE DO YOU THINK WE WOULD FIND A PREFIX, JUSTIN?			E-15 E-1
	S: At the beginning of a word.		
		T: At the beginning. A prefix is a syllable added to the beginning / of a word to change its meaning. I want you to etch this in your brain, okay..	FB-PE
17:06		learn it.	

Example Three. In her lesson on recognizing word pronunciation by using prefixes and suffixes, Teacher 14 illustrates the use of process elicitations (E-3) to (1) obtain information about how to perform the skill, as well as (2) asking a student to explain how they performed it with an example. In example (a) her evaluation consists of confirmation through repetition (FB-PR).

Example Three (a): (Review, SEQ. 31, TEP 14R5, 4-21-83)

Initiation	Reply	Evaluation	Comment
20:49 T: EXPLAIN TO ME HOW YOU'RE GOING TO GO ABOUT USING THE SKILL THIS WAY?			E-3
	S: Find the base word...		
		T: Find the base word.	FB-PR
	S: Then you look for if it has a prefix and suffix.		
		T: Okay, prefix and suffix.	FB-PR
	S: Then you put it all to-gether.		
		T: Put it all together.	FB-PR
	S: Say the word.		
		T: Then say the word.	FB-PR
21:15			

In example (b) she responds to the student's answer by seeking verfication (E-12, FB-ESCT) and clarification (E-11) before positively certifying the response.

Example Three (b): (Guided Practice, SEQ. 15, TEP, 14R5, 4-21-83)

Initiation	Reply	Evaluation	Comment
9:31 T: /(Writes on board)/ This one's hard. There's something different about this one than what we've done before today. CRAIG?			E-1
	S: The base word has than and the end has ful, so it'll be unthankful.		
		T: He said the base word is thank and the part at the end is ful. So it will be unthankful. /	FB-PR
DID HE SKIP SOMETHING?			E-12 FB-ES
	S: Yeah.		CT
T: WHAT'D HE SKIP JENNY? HOW WOULD YOU THINK THAT OUT AS YOU WERE TRYING TO FIGURE THE WORD OUT?			E-1 E-3
	S: Think is the base word. Ful is the suffix. Un is the prefix and put it together, thankful.		
		T: THANKFUL?	E-12 FB-NPr
	S: Unthankful.	T: ARE YOU SAYING THINK?	E-11 FB-PrR
	S: Unthankful.		
		T: Oh, I didn't hear you.	
11:03		Unthankful, okay.	FB-PR

Example Four. In the same lesson, Teacher 14 also illustrates usefulness elicitations (E-5). The following sequence was part of her Interactive Presentation, in which she called upon students to assist in the initial presentation of information about the skill usefulness.

Example Four: (Interactive Presentation, SEQ. 7, TEP 14R5, 4-21-83)

Initiation	Reply	Evaluation	Comment
4:28 T: Okay, we've talked about the what. We've talked about the how WHAT ABOUT WHY? WHY SHOULD WE KNOW THIS? WHY SHOULD WE BOTHER DOING THIS, TOM?			E-5
	S: So you know a word, the roots of the word, pronounce the words. Okay.../		
		T: Okay...	FB-Neut
T: SOMEBODY ELSE? WHY DO YOU THINK WE'RE LEARNING THIS, LARRY?			FB-PrM E-5
	S: When you come to a word in the book they don't know.		
		T: Alright.	FB-P
T: WHERE MIGHT THIS HAPPEN TO YOU? WHERE MIGHT YOU BE?			E-5 FB-PrM
	S: In the library.		
		T: It might be while you're reading a book.	FB-PE
5:03			

Example Five. The following examples illustrate the two kinds of elicitations related to overseeing how students performed the academic tasks needed to complete the lesson or make it run smoothly. Although both were combined for this analysis into a single category representing academic task management, each had its particular management focus.

In Example Five (a), Teacher 01 directs students through the examples used during Guided Practice.

Example Five (a): (Guided Practice, SEQ. 10. TEP 01R3, 2-23-83)

Initiation	Reply	Evaluation	Comment
5:57 T: ALRIGHT, LOOK AT THE NEXT ONE DOWN, -IST.			E-15
IF YOU SEE THAT WORD WHEN YOU ARE READING, WHAT WOULD -IST MEAN TO THE BASE WORD? //			E-1
JUST READ ON YOUR PAGE, THAT'S ALL, OKAY?	S: One who was.. (inaudible)		E-6
6:15		T: Alright.	FB-P

In Example Five (b), Teacher 11 manages the logistics of preparing students for participation in the lesson.

Example Five (b): (Introduction, SEQ. 2, TEP 11R4, 3-14-83)

Initiation	Reply	Evaluation	Comment
0:09 T: DO YOU HAVE YOUR SHEETS WITH YOU?			E-B
	S: What sheets?		
		T: What sheets! ANYBODY KNOW WHAT SHEETS I'M TALKING ABOUT? /RILLA?	FB-NPr
	Ss: Yes.. S: The prefix list?		
		T: The prefix list. That's right.	FB-PR
S: What does it look like?			
	T: Uh, uh../Just relax a minute (goes to her desk and returns to front of class with a paper) / / It looks like this /(holds paper up)/.		
		T: You're supposed to have that with you <u>all</u> the time. /JUST FOLD IT UP AND SLIP IT IN YOUR READING BOOK, AND THEN IT WILL STAY WITH YOU. Your reading book makes a nice carrying place for these things.	FB-NE E-B
0:47			

APPENDIX 3D.2

Examples of Structural Form Codes

Sequence Examples show application of Structural Form Codes (Data Analysis Step 3). Thirty-seven examples are provided.

Codes represented (in order):

Teacher Monologue (TM) -- Examples 1-2
Teacher Interactive Monologue (TMS) -- Examples 3-5
Simple Sequence (S3) -- Examples 6-16
Extended Sequences (ES) -- Examples 17-37
according to the following categories:

Extended - Accepted - Same Student (EAss)
Extended - Accepted - Different Students (EAds)
Extended - Unaccepted - Same Student (EIss)
Extended - Unaccepted - Different Students (EIds)

Appendix 3D.2

Examples of structural form codes

The following thirty-seven example sequences are illustrative of the sequence structural form categories used to classify instructional sequences. These examples are numbered consecutively, and classifications are presented in the order described in Table 3.8.

(1) Teacher Monologue (TM). The following two examples illustrate sequences with the Teacher Monologue code.

Example One is a Teacher Monologue sequence taken from Teacher 19's skill lesson on how to use glossary and dictionary respellings to pronounce unknown words. The sequence occurs in the lesson Introduction phase and is a "gameplan" sequence overviewing how information will be presented in the lesson.

Example One: Teacher Monologue (TM)
(SEQ. 2, TEP 19R4, 2-28-83)

Initiation	Reply	Evaluation
1:25 T: Now, STOP TALKING PLEASE AND LISTEN TO ME. / Remember that this is a new text-book. The words are going to be more com-plicated. There'll be in your vocabulary you'll have, uh, words will be multisyllabic. That means they'll be longer. They'll be more difficult for you to pronounce. So today before we start in our new book, before we talk about the title, before we do anything with it, I'm going to give you your new words for today. We;'re going to work on those new words. I'm going to teach you or help you to sound those words out. So that when you are reading the stories, it'll be easier for you to read those stories. Okay. Today we're going to work on how to use the respel-ling / (writes on board). Okay. This is what we're going to talk about. / How to use the respelling in our glossary or our dictionaries. / Okay. 2:13		

Example Two. This example from Teacher 14;s lesson on pronouncing words with prefixes and suffixes, illustrates the kind of Teacher Monologue sequence that was often used by teachers during a presentation phase to model how to perform the skill.

Example Two: Teacher Monologue (TM)
(SEQ. 2, TEP 14R5, 4-21-83)

Initiation	Reply	Evaluation
2:12 T: For example, I had this word /(write on board)/ and I didn't know it, first thing I do is look at that word and say, 'Is there a part of that word I already know?' / Sure, I know that word, shadow. And I know there are some letters in front of it that I know what they say. They say 'over'. So I put those two together and I know that word says 'over-shadow'. Three steps. 2:51		

(2) Teacher Interactive Monologue (TMS).

In Example Three, Teacher 01 is the primary speaker as she models a skill strategy for decoding unknown words. However, she often pauses as she models and allows students to respond in unison ("Ss" indicates multiple students responding) with product responses that anticipate what she will say next. This type of interactive cuing during a monologue presentation was prevalent for some teachers in

the study and seemed designed to maintain student attention. Use of this type of cuing also seemed to occur with "low risk" declarative information which guaranteed student success with correct answer-getting.

Example Three: **Teacher Interactive Monologue (TMS)**
(SEQ. 5, TEP 01R2, 12-8-82)

Initiation	Reply	Evaluation
4:31		
T: Now there is another way that we can do this. Well, suppose you see this word. / /(writes on overhead)/ Well, you look at that and you try the first way. Say, well, I know part of that word. But there's also another part on that word that I knew before I knew the other paret. / I know what this is over here. This thing here is called a suffix, and it's pronounced i-n-g. /	Ss: (whispers)	T: Shhh!
	Ss: /ing/	
SO WE TAKE OFF THE SUFFIX OR THE.../		
	Ss: prefixes	
prefixes on the word, AND THEN WE LOOK FOR WHAT WE'VE KNOWN AS THE... /		
	Ss: root	
root word, and then we put the root word with the suffix or the prefix and we pro-nounce the word. So that's two ways. The first way, try to see if it is a compound word two whole words joined together. / If so, separate the words		

Example Three (cont'd)

Initiation	Reply	Evaluation
and then try to pro-nounce the word and if you pronounce it like 'everything'. 'Every-thing?' 'Everything.' 'Everything.' So that's everything. And with this one, / IF THIS IS '-ING', AND THIS IS.../		
	Ss: teach	
THEN TOGETHER THEY MUST BE.../		
	Ss: teaching	T: teaching.
5:50		

Teacher Interactive Monologue sequences were often associated in these skill lessons with providing students with directives (i.e., elicitation codes 6 and 8) when explaining task directions. As shown in the following two examples, the interaction was often the result of student requests for clarification.

In Example Four, Teacher 04 is prompted by student confusion following her reading of the directions for an upcoming worksheet on base words and endings to clarify the independent practice task.

Example Four: Teacher Interactive Monologue (TMS)
(SEQ. 33, TEP 04R2, 1-5-83)

Initiation	Reply	Evaluation
22:06 T: Down at the bottom it says (reads) "Look at the letter from the ones below. In that row of letters, draw a line through the big word that you printed in box one each time it appears. The words on the left will be the ending to the first riddle." / Oh, good. CROSS OUT BEGIN.		
	S: Begin?	
T: EVERY TIME YOU SEE BEGIN, CROSS IT OUT. / I know / / YOU SEE THEM? / / That makes the answer. SO WHAT HAS NO END AND NO BEGINNING?	Ss: Umhum...	
	S: A circle?	
		T: A circle, that's the answer.
22:40		

Example Five also illustrates interaction occurring during a teacher's monologue presentation in lesson closure of directives for doing the practice task which follows the group lesson. In this case, Teacher 19 is clearly less responsive to students' interruptions.

Example Five: Teacher Interactive Monologue (TMS)
(SEQ. 33, TEP 19R1, 10-22-82)

Initiation	Reply	Evaluation
31:47 T: READ THE PARAGRAPH AND DOO THE ASSIGNMENT. It's like a test. YOU HAVE FOUR ITEMS ON IT, OKAY?		
	S: We're going to read this.	
T: PUT YOUR NAME ON THE TOP / and we are going to see if you pass this test.If everybody passes the test, you wait and see what happens on Monday.		
S: What about (inaudible)		
	T: I can't tell you. /	
READ IT TO YOURSELF AND DO WHAT IT SAYS. 32:00		

(3) Simple Sequence (S3).

Sequences with the three-part initiation-student response-teacher evaluation interaction form were very prevalent in the data. The example three-part sequences which follow have been selected from the skill lessons of several teachers to reflect the variety of elicitation types which might initiate an interaction of this kind, and different feedback elements which could close it. The eleven examples below are also representative of recurring examples of similar simple sequences in the transcript data as a whole.

Example Six is an adjacent pair of simple sequences taken from Teacher 02's lesson on uses of the apostrophe during the Introduction phase in which she asks students to provide information about their knowledge of punctuation marks. A product elicitation (E-1) initiates the first sedquence; a elicitation for skill knowledge background (E-10S) initiates the second.

Example Six: Simple Sequence (S3)
(SEQ. 6-7, TEP 02R5, 5-11-83).

Initiation	Reply	Evaluation
1:49 T: Authors or writers use signals. CAN YOU THINK OF A WORD THAT WOULD TELL US WHAT THOSE KINDS OF SIGNALS ARE CALLED? When you are writing your lesson, you use signals. There is a special name for those signals. LEMANS?		
	S: Punctuation marks.	
		T: Punctuation marks, okay.
2:17 T: CHARLES, GO TO THE BOARD AND PUT A PUNC-TUATION MARK ON THE BOARD PLEASE. Any one that you use when you are writing. Well, maybe you don't use just any one. I'M ASKING FOR A PUNCTU-ATION MARK.		
	S: (goes to board and writes)	
		T: Alright, Charles put a period on the board.
2:50		

In the pair of simple sequences taken from the Interactive Presentation phase of Teacher 04's lesson on "Using the Glossary" (Example Seven), the teacher elicits different aspects of definitional information about the skill topic (E-1). The flow of the sequences is interrupted by a short behavior management sequence (E-9) directed to a student outside the group.

Example Seven: Simple Sequences (S3)
(SEQ. 2-4, TEP 04R5, 4-27-83)

Initiation	Reply	Evaluation
0:05 T: WHO CAN TELL ME WHAT A GLOSSARY IS? R.J.?		
	S: A summary to look up words and find the definition.	
		T: Good. Alright.
0:18 T: GREG! IT'S YOUR SEAT-WORK TIME, RIGHT?		
	(Noise from outside the group lessens)	
0:24 WHERE CAN YOU FIND A GLOSSARY, TERRY?		
	S: Maybe from the back of a book.	
		T: In the back of a book. Okay.
0:32		

The next series of example simple sequences illustrates how teachers elicit product information when asking students to figure out the answer to an example in which the skill

must be used in order to answer correctly.

Example Eight is from Teacher 22's lesson on "Using Context Clues to determine Word Meaning". In her Introduction phase, she uses an example to remind students of what they already know about using the skill (E-1). This sequence was presented previously in Figure 3.1 using the more traditional transcript lining format. Inclusion of this example allows the reader to compare formats for presenting classroom interaction data.

Example Eight: Simple Sequence (S3)
(SEQ. 3, TEKP 22R5, 4-18-83)

Initiation	Reply	Evaluation
2:33 T: HOW IS THAT WORD BEING USED? (NO PAUSE) Remember if we had a word, let's say 'snicklefriss', and I told you 'I pounded a nail into a board with my snicklefriss.' Now, you have no idea what a snicklefriss is, but by the way I use it, the other words in the sentence that I use it in, YOU CAN SORT OF GUESS THAT IT MIGHT BE A WHAT?		
	Ss: Hammer.	
		T: A hammer or some type of tool. Context or the content always being contained... sentence it is being put into. REMEMBER THAT? We worked on these.
3:23		

In Example Nine, Teacher 02 asks a student to define a word by using the meaning of it's prefix during the Recitation Practice phase of a "Prefixes" lesson.

Example Nine: Simple Sequence (S3)
(SEQ. 27, TEP 02R3, 2-22-83)

Initiation	Reply	Evaluation
15:38 T: WHAT DOES 'REAPPEAR' MEAN, PATRICK? The star suddenly reappeared in the sky.		
	S: It came out again.	
		T: Alright, It came back again. good. No problem with that . You understand.
15:55		

Example Ten illustrates how teachers often telegraph elicitations during practice phases by simply calling a student by name once the expectations for how to do examples are established. The following pair of simple sequences occurred during the Recitation Practice phase of Teacher 14's lesson on "Pronouncing words with prefixes and suffixes" when students responded correctly. At the outset of the phase, the teacher asked students to "...PRETEND THAT YOU ARE READING ALONG AND YOU COME TO THIS WORD AND YOU DON'T KNOW IT. USE THE SKILL AND TRY TO FIGURE OUT WHAT THE WORD IS." (seq. 39). Although students were expected to demonstrate process understanding in their response (i.e.,

procedural knowledge), the elicitations are posed to obtain the product answers for the examples.

Example Ten: Simple Sequence (S3)
(SEQ. 43, 47; TEP 14R5, 4-21-83)

Initiation	Reply	Evaluation
28:50 T: TAKE FIVE, THERESA?		
	S: The suffix is -ness and the base word is ripe-ness. / And the word is ripe and the prefix is over. Over-ripe.	
29:01		T: Good.
30:01 T: GO AHEAD, DAVE.		
	S: The base word is success. And the suffix is -ful and prefix is un- and the base word is success. Unsuccess-ful.	
30:40		T: Good.

Example Eleven, from Teacher 04's glossary lesson, illustrates telegraphed elicitations during Recitation Practice where the correct student response is to provide the page number on which the example word can be found (E-1).

Example Eleven: Simple Sequence (S3)
(SEQ. 40, TEP 04R5, 4-27-83)

Initiation	Reply	Evaluation
16:19 T: MOMENT. Just a moment.		
	(sound of pages being turned)	
AMY?		
	S: 364	
16:33		T: 364. Okay.

Example Twelve and Example Thirteen show simple sequences in which the teachers elicit information about skill usefulness (E-5), or conditional knowledge of where the skill can be applied.

Example Twelve occurs in Teacher 04's Introduction to her lesson on "Alphabetizing".

Example Twelve: Simple Sequence (S3)
(SEQ. 4, TEP 04R3, 2-15-83)

Initiation	Reply	Evaluation
0:30 T: WHY MIGHT WE NEED TO KNOW ALPHABETICAL ORDER? WHAT GOOD DOES IT DO US?		
	S: It helps us find words in the dictionary?	
		T: Good. It helps us find words in the dictio-
0:44		nary.

Example Thirteen occurs in the Review phase of Teacher 18's lesson on "Letters that make the/f/ sound". The teacher's evaluation response to the student's response

interrupts the student apparantly in an effort to shape the usefulness information shared with the rest of the reading group.

Example Thirteen: Simple Sequence (S3)
(SEQ. 36, TEP 18R3, 2-11-83)

Initiation	Reply	Evaluation
22:55 T: OKAY NOW, WHEN MIGHT I USE THIS INFORMATION?		
	S: Whenever you see one of those four letters and	
		T: Whenever I run across, LUCY, a word I don't know. No matter where I am, JO, if I run across a word with those letter combinations in it, that I don't know, I am going to try out what we just did today.
23:28		

Example Fourteen is from Teacher 08's lesson on "Uses of the comma", in which the teacher conducts Recitation Practice by having students write their responses to her questions. This sequence illustrates eliciting responses related to the logistics of tas completion (E-8) and includes a lengthy pause for students to complete their responses.

Example Fourteen: Simple Sequence (S3)
(SEQ. 21, TEP 08R2, 11-24-82)

Initiation	Reply	Evaluation
12:50 T: HAS EVERYBODY GOT THE SECOND ONE DOWN? /(Pause - 75 seconds)/	S: (Noise from talking escalates) S: I got it.	
14:15		T: / / Okay.

The final examples of simple sequence form focus on student management situations encountered by teachers during lessons. For most teachers, these sequences occurred as interruptions to the topical flow of the lesson.

Example Fifteen occurs during the Closure phase of Teacher 11's lesson on "Prefixes for word meaning", between two monologue sequences in which she presents the task assignment for independent practice.

Example Fifteen: Simple Sequence (S3)
(SEQ. 29, TEP 11R4, 3-14-83)

Initiation	Reply	Evaluation
18:32 T: WHAT'S THE MATTER, UH, KENNY?		
	S: (inaudible)	
		T: PUT THAT DICTIONARY AWAY. I don't want to see any dictionaries out. Dictionaries are banned books for this activity.
18:50		

Example Sixteen occurs at the juncture between Teacher 22's Introduction and Interactive Presentation phases in her lesson on the pronunciation of "'str'-words". Although unrelated directly to the topic of the lesson, the teacher's behaviorial elicitation appears designed to prepare students for focusing attention on the lesson topic. While sequences of this type occurred in most of the lessons studied, their frequency was probably inhibited by the presence of an outside observer at the time the lesson was conducted.

Example Sixteen: Simple Sequence (S3)
(SEQ. 7, TEP 22R2, 12-13-82)

Initiation	Reply	Evaluation
1:29 T: REGGIE, PUT YOUR BOT-TOM IN THE CHAIR PLEASE.		
	S: (inaudible and sound of chair moving)	
1:43		T: Thank you. Alright. /

(4) Extended Sequences

The examples below are illustrative of the following four category codes: (a) Extended Sequence--Accept, same student (EAss); (b) Extended Sequence--Accept, different students (EAds); (c) Extended Sequence--Incorrect, same student (EIss); and (d) Extended Sequence--Incorrect, different students (EIds).

(a) Extended Sequence--Accept, same student (EAss): The following example teacher-student interaction sequences represent various kinds of instances in the analyzed skill lessons where the teacher elicited an informational response of some kind from a student and then probed for further responses related to the sequence topic after the student replied with a correct or acceptable response.

Example Seventeen. This example from Teacher 19's lesson on "the /sh/ sound" shows a type of extended sequence that frequently characterized word pronunciation skill lessons--the stringing together of topically related simple sequences. During Recitation Practice, the teacher presented the student with a word to sound out (in this example, the word contains the alternate sound of 'ch').

Example Seventeen: EAss (SEQ. 34, TEP 19R5, 3-23-86)

Initiation	Reply	Evaluation
19:33 T: MARY, COME AND DO ONE FOR US PLEASE? The next one.		
	S: (inaudible sounding)	
		T: Okay,
AND YOU KNOW THE FIRST PART OF THAT WORD SAYS WHAT?		
	S: Wood?	
		T: That's right.
AND THE NEXT PART?		
	S: chuck.	
		T: /ch/-/uck/, okay, woodchuck.
19:58		

Example Eighteen. In a lesson on "Syllables", Teacher 04 demonstrates how teachers often established the parameters for student respones through use of directive elicitations in introductory remarks to the Recitation Practice phase. They were then were gradually able to telegraph elicitations in subsequent extended sequences to allow a single student to make the several responses required to show understanding. When the student's initial response was correct, this type of extension could proceed very smoothly as shown in the following series of sequences following a monologue presentation of directions (SEQ. 15).

Example Eighteen: EAss (SEQ. 15-16, 20; TEP 04R4, 3-30-83)

Initiation	Reply	Evaluation
5:24		
T: I'm going to give you a word and YOU TELL ME HOW MANY SYLLABLES IT HAS. You can use whatever method you want to, unless you have trouble, and then we'll help you. (Words are on cards.)		
5:41		
/(implies respondant)/		
	S: Two.	
		T: Two, very good
CAN YOU TELL US WHERE YOU WOULD DIVIDE THEM? TAKE THIS MARKER AND MAKE A LINE WHERE YOU WOULD DIVIDE. SAY IT OUT LOUD FOR US, REAL SLOW. Just like you did when you clapped your hands.		
	S: Gar-den (claps)	
		T: Alright
NOW DIVIDE BETWEEN THOSE.		
	S: (marks the word)	
6:07		T: Very nice job.
7:06		
T: /(implies respondant)/		
	S: Chipmunk.	
		T: Good.
HOW MANY SYLLABLES?		
	S: Two	
		T: Two.
SAY IT REAL SLOW.		
	S: Chip-munk.	
		T: Good.
LET'S SEE WHERE HE DIVIDES IT.		
	S: /pause to mark word- 6 seconds/	
7:35		T: Alright.

Example Nineteen. Often in extended interaction sequences with a single student, the teacher withheld evaluative feedback until the student responded to an entire series of elicitations successfully. Each subsequent probe for additional information seemed to serve as implicit positive certification of the prior response, as illustrated in the following sequence from the Recitation Practice phase of Teacher 20's "Synonyms and Antonyms" lesson. Students were asked to identify whether two words were same or different in meaning. The extension here is based on asking the student to justify her initial answer.

Example Nineteen: EAss (SEQ. 26, TEP 20R4, 3-18-83)

Initiation	Reply	Evaluation
19:34 T: ALRIGHT, THE NEXT ONE. MONICA?		
	S: Plea and request.	
		T: Alright, SAY IT AGAIN.
	S: Plea and request.	
		T: Alright.
	S: Synonyms.	
		T: YOU SAY IT MEANS THE SAME?
	S: Umhum.	
T: WHY DO YOU SAY IT MEANS THE SAME?		
	S: //Umm //	T: DID YOU LOOK PLEA UP?
	s: Uh-huh	
T: Okay, WHAT IS THE MEANING FOR PLEA?		
	S: A request or call for help of some kind.	
T: SO REQUEST AND PLEA ARE...?		
	S: The same.	
T: SO THEY ARE CALLED WHAT?		
	S: Synonyms.	
15:18		T: Synonyms.

Example Twenty. In her lesson on "Reading for Details", Teacher 08 also asks a student to prove the correctness of her answer to a true-false practice example. In this case, the teacher elicits a text citation for justification--a means of sequence extension seen in several lessons.

Example Twenty: EAss (SEQ. 25, TEP 08R4, 3-3-83)

Initiation	Reply	Evaluation
24:54 T: Okay / NUMBER TWO, SAMANTHA?		
	S: Thousands of years ago lakes were bigger/ I put yes.	
		T: Alright,
WOULD YOU PLEASE READ IN THE ARTICLE?		
	S: "Thousands of years ago it was much bigger and was a fresh water lake."	
		T: Okay, you're right and you read it right out of there.
25:16		

Example Twenty-One. In some instances interaction sequence extensions with a single student were the result of the teacher probing for additional information to clarify the student's intial response. This is illustrated in the following example from a review phase in Teacher 14's "Drawing Conclusions" lesson. The teacher accepts the student's response, withholding certification, however, until clarification is exacted (see also, Example Twenty).

Example Twenty-One: EAss (SEQ. 25, TEP 14R4, 3-7-83)

Initiation	Reply	Evaluation
18:22 T: CAN SOMEBODY ELSE TELL ME HOW YOU DRAW CONCLUSIONS? You're going to teach your friends / this now after school. HOW YOU'RE GOING TO TELL HIM WHAT?		
	S: Words that the author says and what you already know.	
T: WHAT DO YOU DO WITH WORDS THAT THE AUTHOR SAYS AND WHAT YOU ALREADY KNOW?		
	S: Use them as clues.	
T: TO HELP YOU WHAT?		
	S: Draw conclusions.	
		T: Draw conclusions. Good, I'm glad you're using that word.
18:45		

Example Twenty-Two. This example, from Teacher 22's lesson on "Apostrophes for possessives", illustrates the length and complexity that could be found in extended interaction sequences even when student responses were wholly acceptable. Sequences of this kind were typically located in the Guided Practice phase of the lesson. Also, in the skill lessons analyzed, sequence extensions could follow from academic management elicitations which initiated treatment of a

practice example. For example, a common kind of sequence receiving this code was one in which the teacher first asked a student to read an example aloud, prior to initiation of answer-getting tasks requiring use of the lesson's skill. Several extended sequences in the data were of this kind. In these cases, coding according to student response acceptability was based on the elicitations and responses following the academic management task rather than the student's ability to read the text of the example fluently. It should be noted, however, that when sequences involved oral reading, a student's ability to negotiate the text fluently was a determiner in the length and discourse flow quality of the sequence.

Example Twenty-Two: EAss (SEQ. 16, TEP 22R4, 3-8-83)

Initiation	Reply	Evaluation
13:24		
T: DWAYNE, DO YOU WANT TO READ THE NEXT ONE?		
	S: (reads) "The girl's dog is a puppy."	
		T: LOOK AGAIN.
	S: "The girl's / wait / the girl's dog is just a puppy."	
		T: Perfect. Okay. The girl's dog is just a puppy.
I'm looking up and I see, the girl's dog is just a puppy. SOMEBODY OWNS SOMETHING HERE.		
	S: Oooo-oooo. The girl owns the dog?	
		T: Alright. Girl's puppy.
T: Now I don't know whether that means girls, you know, more than one girl owns the puppy, or whether it's one girl's puppy. SO HOW DO I THINK IN MY HEAD, HOW DO I FIND OUT WHETEHR ONE GIRL OWNS THE PUPPY OR WHETHER MORE THAN ONE GIRL OWNS THE PUPPY?		
	S: You look at the paper and if the apostrophe's before, af-ter, before the s.	

Example Twenty-Two (cont'd.)

Initiation	Reply	Evaluation
T: SO WHAT DOES THAT MEAN?		
	S: One girl.	
		T: You're saying you looked and the apostrophe only closed in the word girl. LEFT THE S OUTSIDE, DIDN'T IT? / So that meant only the word girl.
	S: Mmmmm	
SO HOW MANY?		
	S: One.	
		T: One girl owns the puppy. / You guys are good at this.
14:48		

(b) Extended Sequence--Accept, different students: Teachers often engaged two or more students in extended interaction sequences even when the first respondant's answer was accepted. The obvious benefit of this practice was greater group involvement in practice sequences, especially during the lengthier interactions characteristic of the Guided Practice phase. During Recitation Practice phases, multiple students might be involved in providing the "pieces" that made up the total response treatment to a practice example without the more extensive teacher elaboration of guided practice. The examples below represent the numerous instances of this kind of sequence.

Example Twenty-Three. This extended sequence occurred in the Guided Practice phase of Teacher 21's lesson on "Outlining and Noting Details". Sequences were coded as "Accepted, different students" when students were signaled to respond as a group to a verification request following a single student's response.

Example Twenty-Three: EAds (SEQ. 11, TEP 21R4, 3-1-83)

Initiation	Reply	Evaluation
7:29 T: Okay, BACK TO THE FIRST MAIN IDEA / MMMM, RELATED TO THE TITLE OF THIS STORY. / The title of this story "Hot Springs in Iceland", WHAT DOES JUST THE TITLE TELL YOU? CONNIE?		
	S: That there's hot springs in Iceland.	
		T: Alright. SO IT'S GOING TO SAY WHERE THE HOT SPRINGS COME FROM, DOESN'T IT? /(writes on board)/
	Ss: Yes, Yup	
8:17		Okay.

Example Twenty-Four. In another example from the same lesson, Teacher 21 illustrates how grounds for extending with different students might relate only to the acceptability od the syntactic form in which a student responded, not the answer correctness.

Example Twenty-Four: EAds (SEQ. 5, ibid.)

Initiation	Reply	Evaluation
2:52 T: Okay, the //...we can go ahead and do this part, WHAT ARE THE SPRINGS USED FOR?		
	S: Heating.	
		T: Alright / MAKE IT MORE OF A PHRASE.
HEATING WHAT?		
	S: Heating greenhouses.	
		T: RAISE YOUR HAND PLEASE. /
SUSAN?		
..cmd		
	S: Heating greenhouses.	
		T: Okay, heating greenhouses /(writes on board)/
3:23		

Example Twenty-Five. Often the only way to tell that different students were involved in an interaction sequence was by listening to the audiotape. Teachers' acknowledgement of turns for responses were frequently nonverbal cuing signals as elicitations were being spoken. Teacher 20 illustrates this in the Recitation Practice phase of her "Synonyms and Antonyms" lesson.

Example Twenty-Five: EAds (SEQ. 12, TEP 20R4, 3-18-83)

Initiation	Reply	Evaluation
6:55 T: ALRIGHT THE NEXT ONE THERE? /		
	S: (muffled) Antonyums.	
T: Patiently and impatiently, AND OF COURSE YOU CAN LOOK AT THOSE WORDS AND AUTOMATICALLY TELL THAT THEY ARE...		
	S: (different voice) Antonyms	
		T: Antonyms
BECAUSE THEY MEAN?		
	S: (different voice) Opposite.	
		T: Opposite, alright.
7:12		

Example Twenty-Six. Teacher 02, in her lesson on "Uses of the Apostrophe", closes by explaining how to do a practice worksheet. The following extended sequence allows the group to do the first item together for task understanding before completing the worksheet on their own.

Example Twenty-Six: EAds (SEQ. 53, TEP 02R5, 5-11-83)

Initiation	Reply	Evaluation
36:13 T: LET'S DO NUMBER ONE TOGETHER PLEASE. NUMBER ONE SAYS...WHAT, CHRISTIE?		
	S: I've only been late three times.	
		T: LOUDER, CHRISTIE
	S: I've only been late three times.	
		T: Okay, I've only been late three times.
AND WHY WAS THIS APOSTROPHE USED IN NUMBER ONE? I've only been late three times. NOW IN THERE AGAIN, DOES THIS SHOW OWNERSHIP?		
	S: No.	
T: DOES IT POSSESS SOMETHING?		
	Ss: No.	
Contractions or dialect, those are your three choices. / Alright, I think I heard it, I think it came from Robert's mouth, ROBERT?		
	S: Contractions.	
		T: Alright, two words.
WHAT TWO WORDS? I've only been late three times. WHAT TWO WORDS WOULD YOU WRITE ON THE BLANK, IN THE BLANK? CHARLES?		
	S: I and have.	
		T: IS IT A DIFFICULT LESSON?
37:11	Ss: No...	

Example Twenty-Seven. Several sequences occurred in the skill lessons where the teacher elicited multiple acceptable responses by extending a sequence with the probe to a different student, "WHAT ELSE?". Mehan (1979) called this phenomenon "recycling" because the same elicitation was reused in telegraphed form to obtain a different response. Teacher 14 illustrates this kind of extension with different students in her "Drawing Conclusions" lesson.

Example Twenty-Seven: EAds (SEQ. 36, TEP 14R4, 3-7-83)

Initiation	Reply	Evaluation
26:18 T: SIX.../ JESSICA?		
	S: (reads) "Why do you think Hank had a big smile on his face?" Cause he passed the test?	
T: WHAT HELPS YOU KNOW THAT, JESSICA?		
	S: Cause he had a big smile on his face.	
		T: Right.
WHAT ELSE, TERRY?		
	S: He might not want to take the test 'cause he was nervous and he probably don't want to take it.	
		T: AND THAT WOULD MAKE HIM SMILE?

Example Twenty-Seven (cont'd.)

Initiation	Reply	Evaluation
	S: Cause he ran after.	
		T: Oh, he's guessing that when he got there the instructor told him, 'Oh, you don;'t have to take your test today. And that's why he was smiling. Could be. Could be. BUT THAT ISN'T ONE OF YOU CHOICES, IS IT?
	S: Yes / I think	T: Oh, it is one!
IS THERE ANY CLUE THAT WOULD TELL US WHETHER HE DID TAKE IT AND PASS IT OR DID NOT TAKE IT?		
	S: (inaudible)	
		T: THE AUTHOR DOESN'T GIVE US A REALLY GOOD CLUE, DOES HE? We just have to kind of guess.
27:39		

Example Twenty-Eight. A relatively common way to assess students' procedural knowledge of a skill strategy was to initiate a 'how do you you do it?'-type sequence and ask several student to contribute steps describing how to do the strategy. The following example from Teacher 18's lesson on "Main Idea" illustrates the successful negotiation of such an extended sequence as part of the Interactive Presenta-

tion phase review of the previous day's lesson.

Example Twenty-Eight: EAds (SEQ. 9, TEP 18R4, 2-25-83)

Initiation	Reply	Evaluation
5:30		
T: WHO CAN TELL ME, THINK IT THROUGH NOW, WHO CAN TELL ME HOW TO FIND THE MAIN IDEA IF THERE IS A SENTENCE LISTED? WHAT DO YOU DO? WHAT DO YOU DO? YES?		
	S: You read it over.	
		T: You read it first.
WHAT'S THE SECOND THING YOU DO? /		
	S: Sit back and look it over.	
		T: Sit back and look it over
AND WHAT? AND THINK...		
	S: what's the main idea.	
		T: WHAT'S THE PARAGRAPH ABOUT, RIGHT?
	S: Right.	
T: WHAT'S THE THIRD THING YOU DO? JO?		
	S: You look.	
T: WHERE DO YOU LOOK?		
	S: At the first sentence.	
		T: You look at the first sentence and see if that's it.
THEN WHAT'S THE NEXT THING YOU DO? MIKE?		

Example Twenty-Eight (cont'd.)

Initiation	Reply	Evaluation
	S: (inaudible)	
		T: Look at the (inaudible).
WHAT'S THE LAST THING YOU DO? (inaudible name)		
	S: (softly)... middle.	
		T: You look in the middle. And you choose. That's how you do A. If the sentence
6:24		is listed.

(c) Extended Sequence--Incorrect, same student (EIss): A student's incorrect or inappropriate response to a teacher elicitation was almost a guaranteed set-up for extending an interaction sequence beyond the basic three-part form. Unlike 'Extended--Accept' sequences, the teacher here had less maneuverability in deciding whether to extend the sequence if the sequence was to be closed with A positive evaluation. Although extensions of this type involving a single student were not as prevalent in the data as those involving multiple students (examples below in (d)), there were numerous instances where the teacher chose to probe a single student until answer correctness was accomplished. The following series of four example sequences illustrates the kinds of interaction sequences receiving this code designation.

Example Twenty-Nine. In a mid-lesson Interactive Presentation phase of one of the four uses of the apostrophe being taught in Teacher 02's lesson, the following sequence was initiated and extended with a single student. Repeated elicitation recycling, seen here, was an instructional questioning device noted in several lessons. The teacher's evaluative bluntness signals general frustration she communicated throughout sequences in this lesson because students were unable to provide the answers she sought. Extended sequences with a single student, based on incorrect or unacceptable responses of this kind, seemed to interrupt the pacing of practice phases in many lessons analyzed.

Example Twenty-Nine: Elss (SEQ. 43, TEP 02R5, 5-11-83)

Initiation	Reply	Evaluation
27:40 T: IF I ASKED YOU TO COME TO THE BOARD AND GIVE ME THE SHORT FORM OF THE CONTRACTION OF 'DID NOT', WHAT WOULD YOU WRITE / TIM?		
	S: Did not.	
		T: JUST GIVE ME THE WORD, SWEETHEART.
	S: Did not.	
		T: Did not. Okay,
SO IF I ASKED YOU TO WRITE 'DID NOT', USING A CONTRACTION, WHAT WOULD YOU WRITE?		
	S: Did not.	
		T: No. JUST GIVE ME THE WORD.
	S: Didn't.	
		T: Okay. So apostrophe can be used to show ownership, an apostrophe can be used as contractions, these are the time we use an apostrophe. And in sentence E, the contraction is used. This is a long lesson, but you know it is a review. I thought you would be, go right through it but we got,/ better take the time to do it. I see that you didn't remember it. // OKAY?//
28:57		

Example Thirty. The following sequence from Teacher 19's lesson introduction on "Guide Words" illustrates an extension that occurs because the student uses the incorrect syntactical form to express the response sought by the teacher (see Example Twenty-Four above). Again, the student's error is bluntly handled by the teacher's evaluation before she recycles the elicitation to the same student.

Example Thirty: EIss (SEQ. 2, TEP 19R2, 11-30-82)

Initiation	Reply	Evaluation
0:46 T: OKAY WHAT ARE GUIDE WORDS? WHO KNOWS? KEN?		
	S: A word that tells the first word on a page and the last word on a page.	
		T: A WORD THAT TELLS?
	S: A word on the first page and the last page.	
		T: No. You're confused.

Example Thirty (cont'd.)

Initiation	Reply	Evaluation
T: Guide words are... NOW START AND TELL ME AGAIN.		
	S: Guide words are the first word on a page and the last word on a page.	
		T: Okay, the first word on a page and the last word on a page.
1:09		

Example Thirty-One. This example illustrates how a student's misunderstanding of an elicitation could lead to a response technically correct given what was asked, but unacceptable given the lesson topic. Also, it appears that the student's response is tied to a spelling error more than a sound error. In this case, Teacher 01 responds by providing greater clarity in her evaluative probe for a response that fits with the topic of her lesson (i.e., "Suffixes for meaning").

Example Thirty-One: EIss (SEQ. 8, TEP 01R3, 2-23-83)

Initiation	Reply	Evaluation
5:06 T: SUPPOSE THAT WE LOOK AT THE WORD -EN. NOW NOTICE -EN IS LISTED ON HERE [referring to the practice sheet of suffixes] AS TWICE. 'En' can mean two different things if added to a word. Alright, -en, to make. OH, LET ME SEE.../CAN YOU GIVE ME AN EXAMPLE OF -EN ON A WORD THAT MEANS TO MAKE, JACK?	S: I invented..	T: Okay, we need -en on the word now. PUT -EN ON THE END, SUF-FIX.
	S: Lightened.	
		T: Lightened. Okay. That would be to make light.
5:36		

Example Thirty-Two. The following extended sequence from Teacher 18's "Main Idea" lesson illustrates how an incorrect student response during a Guided Practice phase interaction, requiring procedural knowledge using a text example, could prompt the teacher to maintain the interaction with the same student until both declarative and procedural knowledge of the skill was satisfactorily demonstrated. Here, however, the teacher's lengthy elaborations remain focused on procedural information although her elicitations actually redirect student attention to

the informational content of the practice example. It is clear at 22:29 that the teacher unintentionally elicits an additional response from the student that breaks the flow of the point she is trying to make. This sequence illustrates the perceived tension that was noticed in several extended sequences of this kind (i.e., when student incorrect responses 'sidetracked' the teacher's focus) between maintaining focus on the lesson skill topic and eliciting correct answers when using the skill with text examples.

Example Thirty-Two: EIss (SEQ. 24, TEP 18R4, 2-25-83)

Initiation	Reply	Evaluation
21:27 T: DON, THIS NEXT ONE IS YOURS. YOU'RE GOING TO TELL US HOW YOU WOULD DO IT, OKAY? / (reads the example text) / "Do you have some ice, do you have some cream of giraffe soup here? My friend eats it all the time. That is how he got to be so tall. I need to get very big by next Thursday. Cowboy Joe is coming to town and he needs someone to rope horses for him. You need to be tall to do that." / THE FIRST THING YOU'RE GOING TO DO. TELL US WHAT YOU'D DO.	S: Read it over carefully.	T: Okay. We just did that.
	S: Look at the first sentence.	

Example Thirty-Two (cont'd.)

Initiation	Reply	Evaluation
		T: Uh-oh. I DON'T LOOK AT THE FIRST SENTENCE.
	S: Oh, look back at it and see what the main idea is.	
		T: Alright. DON'T FORGET THAT, BOYS AND GIRLS. If you don't take that step of stopping to think what this thing is about, you've lost it all. You've got to sit back and say 'This is about what?' /
	S: Joe./Why I need to grow tall.	
22:29		T: Okay. It's.../ okay. Why I need to grow tall. He's already chosen the main idea.
DID YOU FIND THERE WERE NO SENTENCES THAT STATED IT?		
	S: Uhh. Yes.	
		T: Okay. He has told you why I need to grow tall is the main idea.
WHY DO YOU NEED TO GROW TALL, DON?		
	S: Because Cowboy Joe is coming to town and he needs somebody to rope his horses.	

Example Thirty-Two (cont'd.)

Initiation	Reply	Evaluation
		T: Very good. Alright. Boys and girls, what we seem to be doing here is forgetting to sit back and look to see what the main idea is. DON'T FORGET THAT. That's impor-
23:02		tant.

(d) Extended Sequence--Incorrect, different students: This final category of extended sequence form codes was used when multiple students were involved in repairing an incorrect response, usually made by the initial student called on to reply to an elicitation. This sequence type occurred repeatedly in the lesson data probably as a response to the teachers' needs to involve as many students in the group as possible for management and attentional reasons. As noted earlier, listening to the audiotape of a lesson was often important in discerning use of different students in an extended sequence because of teachers' nonverbal cues to different respondents. The following examples are representative of extended interaction sequences based on incorrect or unacceptable student responses.

Example Thirty-Three. This brief sequence is from Teacher 11's lesson on "Prefixes for word meaning". It illustrates extension with a different student to get the correct answer to what the teacher perceives as a basic identification question (based on her verbal stress on 'pre' in the evaluative probe) to lead off the Guided Practice phase of the lesson.

Example Thirty-Three: EIds (SEQ. 9, TEP 11R4, 3-14-83)

Initiation	Reply	Evaluation
4:14 T: / Now. / LOOK AT YOUR LIST OF PREFIXES AND LET'S SEE HOW WE CAN LOOK AT OUR PREFIX LIST AND TELL US HOW THESE TWO PREFIXES CAN CHANGE THE MEANING OF THE WORD. ALRIGHT, WHAT'S THE PREFIX OF THE FIRST WORD?		
	S: Struct.	
		T: WHAT'S THE PREFIX?
	S: (different voice) Con.	
4:30		T: Alright. /

Example Thirty-Four. As illustrated in the following example from Teacher 07's lesson on "Guide Words", teachers frequently involved more than a single student in a sequence when there were multiple skill features to be identifed. Also, as shown in the previous example, this teacher signals response incorrectness to the first respondant by negatively evaluating the reply in the form of a clarification elici-

tation. This interaction also leads off the Guided Practice phase of the lesson.

Example Thirty-Four: EIds (SEQ. 7, TEP 07R4, 4-11-83)

Initiation	Reply	Evaluation
8:28		
T: Alright, we are going to take these two guide words, 'puzzled and quarentine', // alright, now two guide words...	(low noise)	
		LEAVE YOUR BOOK CLOSED. You're not looking for these guide words. We aren't ready to use our dictionaries yet.
SARA...alright here are two guide words / WHERE WOULD THIS WORD BE FOUND ON THE PAGE?		
	S: Middle.	
		T: MIDDLE?
	S: At the top.	
		T: Alright, this is going to be the first word on the page.
WHERE WOULD THIS GUIDE WORD BE FOUND? TOM?		
	S: On the bottom.	
		T: Alright, this will be our last word on the page.
9:35		

Example Thrity-Five. This example extended interaction during the Guided Practice phase of Teacher 04's lesson on "Using the Glossary" shows how teachers recycled elicitations in telegraphed form with different students when the initial student

respondant's answer was judged incorrect, and the correct response was not obtained on the following turn. The prevalence of this form of extension in the analyzed skill lessons suggests its use as a way to maintain efficient pacing during practice.

Example Thirty-Five: EIds (SEQ. 14, TEP 04R5, 4-27-83)

Initiation	Reply	Evaluation
5:50 T: WHAT / ARE IN THE GLOSSARY? WHAT DO WE CALL THESE (points at the words on the page) / MIKE?		
	S: Endings?	
		T: Endings aren't in the glossary.
YOU HAVE TO LOOK UP THE...WHAT'S THIS WORD CALLED? JAMES?		
	S: /NR/	
T: CAMILLE?		
	S: Context?	
		T: No. Context was finding the meaning. Boy, Mike was a specialist on this.
T.J.?		
	S: The root word?	
		T: The root word or the base word. You have to check for the base word. Endings aren't found in the glossary, just the base words.
6:18		

Example Thirty-Six. In some instances a student respndant might provide partially correct information in a response, in which case the teacher would elicit "help" from other students. Repair sequences of this kind often occurred early in lessons when the teacher assessed what students already knew about the lesson's skill topic. The extended interaction below occurred during Teacher 02's Interactive Presentation phase in her lesson on "Adding -s and -es to make Plurals". The first extension of the sequence occurs following a student's incorrect definition of the term plural. The the teacher further extends the sequence by asking a third student to help improve answer precision.

Example Thirty-Six: EIds (SEQ.6, TEP 02R4, 2-28-83)

Initiation	Reply	Evaluation
5:44		
T: Before we get started, I need to know the definition for this word. WHAT IS THE WORD, ANITA?		
	S: Plural.	
		T: LOUDER.
	S: Plural.	
T: WHAT DO WE MEAN BY PLURAL? MISS BIANCA?		
	S: (inaudible)	
		T: Well..../

Example Thirty-Six (cont'd.)

Initiation	Reply	Evaluation
T: I WANT TO KNOW WHAT THE WORD PLURAL MEANS. / / ANY IDEA? (to same student)		
	S: The same or similar.	
		S: The same or similar. No, but nice try but that's not a correct answer.
MR. RICKY C.? ANY IDEA WHAT THE WORD PLURAL MEANS?		
	S: It means adding another on the ending.	
		T: Adding another word on the ending.
WELL, WHAT KIND OF WORD WOULD YOU ADD TO THE END?		
	S: -S.	
		T: Alright. REPHRASE THAT. You got the right idea, but your definition, uh, could be a little clearer. /
	S: /NR/	
T: ALRIGHT, TORY, HELP RICKY OUT PLEASE.		
	S: Adding an -s to a word to make it plural.	
		T: Excellent. Adding -s to the word to make it more than one. Okay.
7:11		

Example Thirty-Seven. In the last example sequence, Teacher 18 elicits help for the initial respondant's error, yet she returns the responsibility for negotiating the full interaction to that student. Although extended sequences of this kind focused on a single respondant, they were coded in this category because of the actual involvement of several students in producing an acceptable response. This extended sequence is taken from the Recitation Practice phase of Teacher 18's "Main Idea" lesson.

Example Thirty-Seven: EIds (SEQ. 28, TEP 18R4, 2-25-83)

Initiation	Reply	Evaluation
26:17		
T: **Number two. (reads) "The first time you hear your own voice on the tape, you might be very surprised. You probably won't even know it's you. The sound you hear from your voice is differ-ent from the sound your friends hear."** UH, ROBERT, DO THAT. WHAT'S THE FIRST THING I'M GOING TO DO?		
	S: Choose the right one.	
		T: Nooooo.
THE FIRST THING I'M GOING TO DO, EMILY?		
	S: You're to think what the para-graph's about.	
WHAT IS IT ABOUT, ROBERT?		
	S: It's about hearing your-self on the tape.	
T: WHICH ONE OF THESE WOULD FIT IT? (ref. to answer selections on the worksheet)		
	S: Talking on a tape.	
		T: Talking on a tape. The sound of your voice, hearing friends talking. DO YOU AGREE THAT IT'S TALKING ON A TAPE?
	Ss: Noooo.	

Example Thirty-Seven (cont'd.)

Initiation	Reply	Evaluation
T: (To Robert) WHICH ONE DO YOU THINK IT IS?		
	S: B.	
		T: The sound of your voice. Because the whole main idea, Robert, here, is the sound of your own voice on the tape is very different from A. Okay.
27:36		

APPENDIX 3D.3

Examples Illustrating the Application of Sequence Content and Function Codes

Sequence Examples show application of multiple sequence content and purpose codes for sequence descriptions. The description preceding each example addresses the following characteristics:

Topical Information Content
Evaluation Information Content
Cognitive Knowledge Type
Instructional Purpose

Sequences are ordered according to the twelve categories of the Instructional Purpose Coding Scheme (Data Analysis Step 3). Forty example sequences are provided. These lessons were selected to represent all teachers in the sample.

Appendix 3D.3

Examples Illustrating the Application of Sequence Content and Function Codes:

The examples below illustrate how sequence content and function codes were applied to the analysis of questioning practices in skill lessons. To ensure coverage of all the instructional purpose codes, this coding scheme was used as the general organizer for example presentation. For each example, however, a description is provided which includes information about how that sequence was also coded for sequence topical information content, evaluation information content, and knowledge type. Additionally, the phase positioning of each illustrative sequence in its lesson has been noted.

Examples were selected to represent recurring sequence characterizations in the analyzed skill lessons. In this section, the sequence numbering of examples begun in previous sections of Appendix 3D will be continued.

Instructional Purpose Code: 1. Examples 38 - 40 illustrate how teachers assessed student use of reading skills by eliciting answers to questions about practice examples. In the skill lessons analyzed, interaction sequences were most often classified into this particular category of instructional purpose. Additionally, the nature of skill knowledge assessed through practice examples was declarative in focus so sequences coded in this category tended to also receive Knowledge Type Code A. As noted in

the introductory descriptions of the selected sequences, however, it was possible for example-based interaction sequences to show variation in sequence and evaluation informational content foci.

Example Thirty-Eight. The following pair of sequences from Teacher 21's lesson on "Prefixes for meaning" illustrates assessment of skill use in practice examples (Sequence Topical Information Content Code (STIC Code): 3; Evaluation Information Content Code (EIC Code): 2) during the Recitation Practice phase. Short, routinized interactions receiving this combination of content and function codes were common in practice phases.

Example Thirty-Eight: (SEQ. 6-7, TEP 21R5, 3-31-83)

Initiation	Reply	Evaluation
1:31		
T: Number five. THE OPPOSITE OF TRUST, CHRIS?		
	S: Untrust.	
		T: UNTRUST?
ROBERT?		
	S: Distrust.	
		T: Okay.
SO WHAT WOULD YOUR ROOT WORD BE?		
	S: Trust.	
T: AND THE PREFIX?		
	S: Dis.	
		T: Good
1:48		
Number six. WRITE AGAIN, ROCHELLE?		
	S: Rewrite	
T: WHAT IS THE ROOT WORD?		
	S: Write.	
T: AND THE PREFIX?		
1:58	S: Re.	

Example Thirty-Nine. In her lesson, "Uses of the Apostrophe", Teacher 02 uses two examples of possessive use of the apostrophe to assess declarative knowledge of the skill. The first sequence acts as of a review of singular use (STIC Code: 3; EIC Code: 2). The second sequence presents plural use by assessing student attention to the placement of the apostrophe in a second example (STIC Code: 2; EIC Code: 2).

Example Thirty-Nine: (SEQ. 30, 32; TEP 02R5, 5-11-83)

Initiation	Reply	Evaluation
18:47 T: AN APOSTROPHE SHOWS OWNERSHIP, OKAY? / When you see an apostrophe it usually signals that a possessive noun / is in the sentence. An apostrophe shows ownership. WHO OWNS WHAT IN SENTENCE B, DAVID?		
	S: (inaudible)	
		T: Who owns what, which is awkware, it's an awkward phrase.
BUT IN SENTENCE B OWNS WHAT?		
	S: The kitten.	
T: WHAT DOES THE KITTEN OWN?		
	S: The paw.	
		T: Thank you. I think you got it.
19:22		

Example Thirty-Nine (cont'd)

Initiation	Reply	Evaluation
19:30 T: A VOLUNTEER TO READ C, PLEASE? (no pause) ALRIGHT, NICE AND LOUD, LUCY?		
	S: My friends' party was a success.	
		T: Okay, "my friends' party was a success."
ALRIGHT, LOOK AT C. / IS ANYTHING DIFFERENT IN C? TAKE A CLOSE LOOK AT IT, PLEASE. LOOK AT THE WORD FRIENDS'. / WHERE DOES THE APOSTROPHE APPEAR? / RICKY?		
		I like the way you are raising your hand today.
	S: After the s.	
		T: After the s, okay.
20:15		

Example Forty. This example, from Teacher 04's lesson on "Alphabetizing", illustrates assessment of skill use through a practice example in a Recitation Practice phase sequence (STIC Code: 3). The teacher's feedback, however, focuses on skill feature information (EIC Code: 1). Although no student names are given, different students were nonverbally cued to respond to each elicitation in the sequence.

Example Forty: (SEQ. 15, 04R3, 2-15-83)

Initiation	Reply	Evaluation
6:49 T: Okay, we've got, / LET'S LOOK AT THE LETTERS WE'RE ALPHABE-TIZING. / WHAT LETTER IN THIS WORD ARE WE LOOKING AT?		
	S: i	
T: WHAT LETTER IN THIS WORD?		
	S: e	
T: IN THIS WORD?		
	S: o	
T: NOW WHICH ONE OF THOSE LETTERS COMES FIRST?		
	S: e.	
		T: That's it. You're going
7:06		ABC.

Instructional Purpose Code: 2. This code was used to analyze sequences in which teachers assessed students' ability to demonstrate some level of strategic understanding the skill. The information assessed could involve use of declarative, procedural or conditional knowledge as shown in the following example sequences. Although there were exceptions, practice examples were not usually used in this kind of assessment. Elicitations and evaluations typically focused on skill information content. Most instances of sequences receiving this code occurred in review phases.

Example Forty-One. In a Review phase preceding lesson closure, Teacher 19 assesses students' declarative knowledge of "Main Idea" (Knowledge Type Code (KT Code): A; STIC Code: 2; EIC Code: 1) by eliciting a definition. Dissatisfaction with student responses prompts a clarifying elaboration.

Example Forty-One: (SEQ 24, TEP 19R1, 10-22-82)

Initiation	Reply	Evaluation
28:40 T: Okay now. / HOW MANY PEOPLE KNOW WHAT THE MAIN IDEA IS? WHAT'S A MAIN IDEA, ANDY? WITHOUT LOOKING AT YOUR PAPER ANDY I'M GOING TO SEE YOU CHEATING, WHAT'S THE MAIN IDEA? // PUT YOUR PENCIL DOWN, you cannot think and write at the same time, that's hard to do.		
	S: (inaudible)	
T: RAY, WHAT'S THE MAIN IDEA?		
	S: (inaudible)	
		T: Okay. IT'S THE WHAT?
	S: It's the whole thing.	
		T: It's the one thing. I want you to remember to say it's the one thing, because if you don't you'll get too confused because that's the one most important thing.
29:20		

Example Forty-Two. In another review phase sequence in a "Main Idea" lesson, receiving the same combination of content and function codes as the example above, Teacher 18 assesses students' declarative knowledge of the skill from the standpoint of what was learned in the lesson. Her evaluative elaboration to the student's response rephases the lesson topic in more strategic terms.

Example Forty-Two: (SEQ. 29, TEP 18R4, 2-25-83)

Initiation	Reply	Evaluation
27:36 T: Before we stop, I want to ask you something. WHAT DID WE STUDY TODAY?		
	S: Main Idea.	
		T: How to find the main idea.
27:51		

Example Forty-Three. In the same Review phase, Teacher 18 also assesses students' understanding of the strategy she presented earlier in the lesson for finding the main idea (KT Code: B; SCTIC Code: 2; EIC Code: 1). The practice of using elicitations to structure a step-by-step review of a skill strategy was frequently used by teachers who incorporated reviews of this kind in their lessons.

Example Forty-Three: (SEQ. 31, 18R4)

Initiation	Reply	Evaluation
28:30 T: OKAY TELL ME HOW TO DO IT. UMMM, WHAT'S THE FIRST THING I DO? Let me see.../ ANN? / THE FIRST THING I DO.	S: Read the paragraph.	T: Read the paragraph.
BILLY, WHAT'S THE SECOND THING I DO?	S: Look at the first sentence.	T: Noooooo I thought you'd remember after that.
	S: I know!	
MICHAEL?	S: Sit back and think over what the paragraph's about.	T: Sit back and think over what the paragraph's about.
CHRISTI, THEN WHAT DO YOU DO?	S: Look at the first one.	
T: WHAT IF THE SENTENCE IS NOT LISTED?	S: Then you make one yourself	T: Try and make up one yourself. And choose from what is given. Okay.
29:15		

Example Forty-Four. In the Recitation Practice phase of her lesson on "The /sh/ sound", Teacher 19 assesses students' understanding of how to sound out words containing letter combinations which may or may not represent the sound element (KT Code: B; STIC Code: 3; EIC Code: 2). Although the knowledge focus is procedural, the content focus of the sequence is on the example content.

Example Forty-Four: (SEQ. 30, TEP 19R5, 3-23-83)

Initiation	Reply	Evaluation
16:23 T: ZACH, CAN YOU DO THIS ONE?		
	S: Choose.	
T: ZACK, TELL US HOW YOU DID THAT.		
	S: It starts with c-h and I know that is /chuh/.	
		T: Okay.
	S: Then I add-ed the rest on it and I know it's choose.	
		T: Okay, Zack said it starts with c-h and HE KNOWS THAT C-H IN THIS WORD SAYS WHAT?
	Ss: /chuh/	
		T: Okay. /
WE KNOW THAT O-O-S-E SAYS WHAT?		
	S: /ooz/	
		T: Okay.
SO WHEN YOU PUT THE TWO TOGETHER, IT'S WHAT?		
	Ss: Choose.	
16:49		T: Okay.

Example Forty-Five. In another Recitation Practice phase example, Teacher 04 assesses a student's understanding of how to alphabetize words (KT Code: B) by putting a series of words in the correct order (STIC: 3). The content focus in her evaluative elaboration is on general skill information, however (EIC Code: 1).

Example Forty-Five: (SEQ. 3, TEP 04R4, 3-30-83)

Initiation	Reply	Evaluation
0:45 T: WOULD ALL THREE OF YOU PASS YOUR WORDS TO TERRY AND SEE IF HE CAN PUT THEM IN ALPHABETICAL ORDER. /(pauses-10 seconds)/	S: (putting word cards in order)	
		T: Okay. HOW MANY AGREE?
	Ss: (All raise hands)	
		T: Good. Alright.
CAN YOU EXPLAIN HOW YOU DID IT, TERRY?		
	S: By looking at the, at the letters and seeing which letters are the same.	
		T: Very good. You have to go to the second letter, because the first letters' are the same. That was excellent, Terry.
1:16		

Example Forty-Six. This series of sequences from a mid-lesson review phase in Teacher 01's lesson on "Four ways to Decode Unknown Words" illustrates assessment of students' conditional knowledge (KT Code: C) about where they might use the skill information presented in the lesson. The teacher's elicitations set up most of sequence content for verification in the student's responses (STIC Code: 2; EIC Code: 1).

Example Forty-Six: (SEQ. 20-22, TEP 01R2, 12-8-82)

Initiation	Reply	Evaluation
15:59 T: WHAT WOULD YOU BE DO-ING WHEN YOU NEED THESE FOUR, MAYBE?		
	S: When you're alone. Do one of these steps	T: WHEN YOU'RE DOING WHAT?
	S: In the li-brary or something, when you read a book and you get a long word.	
16:13 T: WOULD IT HELP YOU IF YOU WERE READING THE NEWSPAPER?		
	Ss: Yes (unison)	T: Sure. These four ways are valuable.
16: 18 T: HOW ABOUT READING AN ATLAS? WOULD IT HELP YOU SOME?		
	S: Yes (unison)	T: Yes, you will need to name some towns.
16:23		

Forty-Seven. Teacher 22's Review phase assessment of students' conditional knowledge of the skill illustrates the more open-ended elicitations with elaborated evaluations of student responses used by teachers to assess this area (same coding as Ex. 46). This sequence occurred prior to lesson closure in her "Context Clues to determine Wrod Meaning" lesson.

Example Forty-Seven: (SEQ. 25, TEP 22R5, 4-18-83)

Initiation	Reply	Evaluation
31:40 T: WHEN WOULD WE USE THIS? // WHEN WOULD YOU USE THIS SKILL? WHY DO WE TALK ABOUT CONTEXT CLUES? I gave you two times when you would use this when we started. I said you'd have to use content clues if you	S: didn't have a dictionary	T: Yes, if we didn't have a dictionary, and if you didn't have a teacher or someone who knew it to tell you the answer.
WHEN MIGHT THIS HAPPEN TO YOU?	S: In School.	

Example Forty-Seven (cont'd.)

Initiation	Reply	Evaluation
		T: **IT IS APT TO HAPPEN RIGHT HERE IN SCHOOL? (no pause) Probably not, because you have dictionaries, and you have teachers. We might not tell you the answers, but you do have teachers.**
THEN WHEN MIGHT YOU USE THIS?		
	S: At home.	
		T: AT HOME WHEN?
	S: (call outs) reading books	T: Okay, if you're reading a story or book.
WHAT ELSE MIGHT YOU BE READING?		
	S: The dictionary.	
		T: Aw, I don't believe you read the dictionary.
	S: Newspaper.	
		T: Newspaper, maybe. Magazaines I'll bet there will be times you'll find you have the funny papers at home. There may be words you don't know.
33:11		

Instructional Purpose Code: 3. Interaction sequences that combined elicitations assessing both the answers to example items obtained by using the skill and student understanding of how to use the skill received this code. Seeuqnces of this type occurred most often in guided practice phases or, in the event of student difficulty in responding correctly, in recitation practice phases. The following three interaction sequences are representative of interactions with this purpose.

Example Forty-Eight. The following example from Teacher 04's lesson on "Base Words and Endings" is one of a series of similar interaction sequences in this lesson where the teacher used elicitations to assess how students arrived at their answers to practice examples, as well as the correctness of the example itself (ET Code: A; STIC Code: 3; EIC Code: 2).

Example Forty-Eight: (SEQ. 10, TEP 04R2, 1-5-83)

Initiation	Reply	Evaluation
8:53 T: Francie's word. WHAT'S THE WORD?		
	S: Babies.	
		T: Baby.../
WHAT'S THE ENDING?		
	S: e-s.	
		T: Okay,
IS THAT HOW YOU SPELL BABY?		
	S: No.	
HOW DO YOU SPELL IT?		
	S: B-a-b-y	
		T: Very good. LOOK. She did that right and neat and then spelled the root word.
WHAT DID SHE HAVE TO CHANGE? ROBIN?		
	S: The i and make it a y.	
9:14		T: Okay.

Example Forty-Nine. This combined assessment sequence occurred in the Guided Practice phase of Teacher 14's lesson on "Base Wrods and Prefixes and Suffixes" (KT Code: B; STIC Code: 3; EIC Code: 2). Although it appears her main interest is assessing the student's ability to perform the skill, the content focus of initiations and evaluations is on the practice item. At the beginning of the phase the teacher stated how students should respond in the form of a directive requesting the answer and how they thought it out. This enabled her to telegraph the elicitation initiating the interaction.

Example Forty-Nine: (SEQ. 20, TEP 14R5, 4-21-83)

Initiation	Reply	Evaluation
13:08 T: MARY, THIS ONE'S YOURS. /(writes on board)/		
	S: The un- is the prefix. The harm is the base word. The -ful is the suffix. Unharmful.	
		T: Okay. You started and you picked the prefix first and then the base word and then the suf- fix. THINK THAT'LL MAKE ANY DIFFERENCE IN WHETHER YOU CAN FIGURE IT OUR OR NOT?
	S: Um-um	
		T: Maybe not
DID YOU KNOW THIS WAS A WORD YOU ALREADY KNEW WHEN YOU STARTED OUT?		
	S: Yes.	
13:50		T: Good.

Example Fifty. In another lesson, "Drawing Conclusions," Teacher 14 initiates the following Recitation phase sequence by assessing a student's response to the practice item question. She then shifts the content focus, specifically in her feedback, for the remainder of the sequence to assessing students' knowledge of how that answer was obtained (KT Code: B; STIC Code: 3; EIC Code: 1). In the

preceding sequence the group chorally read the passage, about a girl who appears to work in a gas station, to be used for practicing the skill.

Example Fifty: (SEQ. 29, TEP 14R4, 3-7-83)

Initiation	Reply	Evaluation
20:40		
T: READ QUESTION NUMBER ONE, TONY.		
	S: Where do you think Gloria works?	
T: NOW YOU ANSWER THAT.		
	S: A	
		T: A? At a gasoline service station. HOW MANY AGREE WITH TONY? // Your're right.
	Ss: (Hands up)	
HOW DID YOU KNOW, WHAT WERE YOUR CLUES, JILL?		
	S: It said that she puts the gas in.	
		T: Fill the gas tank, that's one clue.
WHAT'S ANOTHER CLUE, MICHELLE?		
	S: Puts air in the tires and cleans the windshield.	

Example Fifty (cont'd)

Initiation	Reply	Evaluation
		T: Good. Put air in the tires and clean the windshield. The author gave you, Michelle, three things the author did say were the things you just told me.
AND YOU PUT THAT TOGETHER WITH WHAT YOU ALREADY KNOW TO FIND OUT WHAT?		
	S: What the author did not say.	
21:43		T: You got it.

Instructional Purpose Code: 4: There were several instances of interaction sequences in the data where teachers used elicitations and feedback to give students, for all practical purposes, enough clues and hints to respond with correct answers to practice items. The circumstances for this kind of assistance were varied as illustrated by the four examples below.

Example Fifty-One. In this Review phase sequence from a lesson on "Uses of the Apostrophe", the student responds to Teacher 02's question about the name of the skill feature with an answer seldom observed in these teacher-student interactions--"I can't". The teacher responds by directing student attention to the board where

the answer is displayed (KT Code: A; STIC Code: 3; EIC Code: 1).

Example Fifty-One: (SEQ. 28, TEP 02R5, 5-11-83)

Initiation	Reply	Evaluation
17:38 T: Alright. LOOK AT A AND B ON YOUR PAPER. THE SPECIAL MARK IN SENTENCE B IS CALLED WHAT? JIM? The kitten's paw was covered with mud. And the word kitten uh s, k-i-t-t-e-n-ummm-s. I want to know what the name of the uhh is. THAT MARK IS CALLED?		
	S: I can't.	
		T: Yes you can, don't tell me you can't, we don't use that word. LOOK ON THE BOARD SWEETHEART, it's on the board. We have a special name.
	S: Apostrophe.	
18:23		T: Apostrophe.

Example Fifty-Two. In this instance, Teacher 04 gives a student who responds with a wrong answer assistance, in her lesson on "Using the Glossary", during the Recitation Practice phase. Rather than negatively evaluating the obviously wrong answer, the teacher guides the student by "backing up" and eliciting information about very specific aspects of the example before finally recycling the original question for the correct answer.

Example Fifty-Two: (SEQ. 24, TEP 04R5, 4-27-83)

Initiation	Reply	Evaluation
11:13 T: I'm going to give you some words and YOU TELL ME IF THEY WOULD COME ON THAT PAGE. [Note: the guide words on the board are 'cool' and ''enjoy'.]		
11:16 HONOR? WOULD YOU FIND HONOR ON THAT PAGE? // WHAT DO YOU THINK? LARRY?		
	S: Yeah.	
		T: Okay.../
WHAT LETTER DOES HONOR START WITH?		
	S: H.	
HOW DO YOU SPELL IT?		
	S: H-o-n-o-r	
		T: H.
ALRIGHT, LET'S GO THROUGH THE ALPHABET. This is a C. WHAT ELSE WOULD YOU FIND ON THIS PAGE?		
	S: D.	
		T: D'S?
	S: E.	
		T: And then every-thing else..f.
DO YOU THINK YOU'LL FIND HONOR ON THIS PAGE?		
	S: No	
11:52		T: No. Very good.

Example Fifty-Three. In her lesson on "Four Ways to Decode Unknown Words", Teacher 01 gives students practice in deciding which of four strategies could be used with various kinds of words. In the example sequence below, students are unable to identify the word features to which the teacher refers in her initial elicitation (KT Code: A; STIC Code: 3; EIC Code: 2). She assists by answering the question herself to keep the practice phase moving along.

Example Fifty-Three: (SEQ. 17, TEP 01R2, 12-8-82)

Initiation	Reply	Evaluation
13:48 T: Alright. I'm going to ask you a question. WHAT DO YOU SEE IN NOBLE THAT APPLIES TO WHAT WE TALKED ABOUT? There were four different things that I told you you could use. WHAT IN HERE LOOKS SIMILAR TO WHAT WE TALKED ABOUT DURING THE FIRST PART OF THE LESSON?		
	S: N-o.	
		T: N-O-? No.
We're looking for something else there. Uh, we're looking for a cluster, not a syllable. WE'RE LOOKING FOR THE CLUSTER.../		
	S: E? /	
		T: And like b-l-e.
This is /no/ and this is /bl/. SO THAT HAS TO BE...		
	Ss: (unison) Noble.	
14:24		T: Noble.

Example Fifty-Four. In this example of answer-getting assistance, Teacher 19 initiates the following series of leading questions to focus student attention on the need to use alphabetical order as part of the skill procedure for using guide words to locate words in a dictionary (KT Code: A; STIC Code:3; EIC Code: 1). Prior to this group interaction, the teacher had been assisting individuals during independent practice of the skill.

Example Fifty-Four: (SEQ. 29, TEP 19R2, 11-30-82)

Initiation	Reply	Evaluation
25:15		
T: BOYS AND GIRLS LOOK AT THE BOARD PLEASE. EVERYBODY STOP AND LOOK UP HERE. //		
		T: Many of you are making mistakes.
REMEMBER THAT SAMENESS IS WHAT WORD ON THE PAGE AGAIN?		
	S: First.	
		T: The first word.
WHAT IS THE LAST WORD ON THE PAGE?		
	S: Sandwich.	
NOW WHERE DOES THE WORD HAVE TO COME FOR IT TO BE ON THAT SAME PAGE?		
	S: In between them.	

Example Fifty-Four (cont'd.)

Initiation	Reply	Evaluation
		T: In between them.
AND WHEN I SAY IN BETWEEN, WHAT ARE WE DOING TO THESE WORDS TO FIND OUT IF THEY COME BETWEEN? WHAT DO YOU HAVE TO DO TO THESE WORDS, IN ORDER TO FIND OUT WHERE THEY WOULD GO ON THE PAGE, PUT THEM IN WHAT?		
	Ss: Alphabetical order.	
		Ss: Alphabetical order.
25:49		

Instructional Purpose Code: 5. Example sequences 55 and 56 illustrate a relatively infrequently occurring kind of assistance interaction. These were instances, usually in Interactive Presenation or Guided Practice phases, where the teacher used directives and questions to "walk students through" an example using the skill procedure prior to beginning more extensive practice. Extended sequences of this kind were usually found in lesson discourse following modeled presentations of a strategy or occasionally when a student error indicated misunderstanding of how to perform the skill. They provided the teacher with opportunities to reiterate important skill information if needed.

Example Fifty-Five. In her lesson on "The /sh/ sound", Teacher 19 follows her model of how to pronounce words using the sound with the extended interaction sequence shown below. She uses an example to assist students as a group in practicing the sounding procedure prior to beginning Guided Practice (KT Code: B; STIC Code: 3; EIC Code: 1).

Example Fifty-Five: (SEQ. 4, TEP 19R5, 3-23-83)

Initiation	Reply	Evaluation
2:11		
T: OKAY, LET ME SEE YOU DO IT. You pretend you've never seen this word before. YOU KNOW THAT P-R-E SAYS WHAT?		
	Ss: /pre/	
T: C-I?		
	Ss: /shhh/	
T: LET ME HEAR YOU SAY THAT SOUND.		
	Ss: (unison) /shhhhhhhh/	
		T: Wait, wait, wait, wait. It sound like ocean waves.
NOW THINK ABOUT IT. LOOK AT IT /PRE/ AND /SH/ AND /US/. I'M GOING TO START WITH ANDY AND GIVE EVERY-BODY A QUICK CHANCE TO SHOW ME HOW THIS SOUNDS. / COME ON, ANDY?		
	S: /ch/	
		T: Not /ch/ but /sh/
	S: /sh/	

Example Fifty-Five (cont'd.)

Initiation	Reply	Evaluation
T: OKAY WILLIAM? And I should only hear the person I'm looking at. WILLIAM?		
	S: /sh/	
		T: Okay, your sound's a little inaudible, COME ON.
	S: /shhhh/	
		T: /pre/ /sh/ /us/. That's precious. Okay. Now that's the way you do it.
3:14		

Example Fifty-Six. In the Interactive Presentation phase of her lesson on "Drawing Conclusions", Teacher 14 orders her elicitations in the following interaction sequence in the same way she "thought out loud" in her modeled explanation of how to perform the skill. She continues with the same text example about a girl watching a parade to assist student understanding of how to use prior knowledge with text information when using the skill (KT Code: A; STIC Code: 3; EIC Code: 2). The Teacher Monologue sequence (KT Code: B; STIC Code: 2) is shown here as the lead for assistance provided in the interaction sequence.

Example Fifty-Six: (SEQ. 4-5, TEP 14R4, 3-7-83)

Initiation	Reply	Evaluation
2:41 T: Here I am and I'm given this to read and I read it. It says (reading from over-head) "Erika saw the people march by. She saw the horses prance down the street. They were followed by people in fancy uni-forms. They played loud band music. Erika smiled and clapped her hands loudly." Now the author does not tell me what is going on here, but I know that it's a parade. And I figured that out by, number one, the words the author did give me. He told me that people were marching by; he told me that horses were prancing down the street; he also told me that there were people in fancy uniforms jplay-ing loud band music. Well, I've seen that before and I have some knowledge in my head about that already. So I put that together and I draw the conclu-sion that it's a par-ade.		
3:53 Now. I can draw another conclusion from that. I can know how Erika's feeling. The author doesn't tell me how she's feeling. HOW IS SHE FEELING , DAVID?		
	S: Happy.	
T: HOW DO YOU KNOW...?		

Example Fifty-Six (cont'd.)

Initiation	Reply	Evaluation
	S: She smiled and clapped loud.	
		T: Alright. Good! You did exactly what you were supposed to. David took the words "she clapped her hands loudly",
AND WHAT'S ANOTHER WORD THE AUTHOR GIVES YOU THAT TELLS YOU HOW SHE'S FEELING?		
	S: Smiled.	
		T: Smiled...
PUT THAT TOGETHER WITH WHAT YOU KNOW ABOUT WHEN YOU SMILE AND CLAP YOUR HANDS...HOW ARE YOU FEELING?		
	S: Happy.	
4:31		T: Happy, usually.

Instructional Purpose Code: 6. This code described interaction sequences in which the teacher assessed student prior knowledge about or experiences with the informational content of practice examples. The sequences below represent instances in the data where teachers appeared to be trying to establish , concrete, "real-life" relevancy for the informational content of the practice context. This kind of sequence frequently occurred in lessons focused on developing word meaning skills.

Example Fifty-Seven. In the Introduction phase of her lesson on "Uses of the Apostrophe", Teacher 02 assesses student understanding of the concept of "signals" prior to introducing the apostrophe as a reading signal (KT Code: A; STIC Code: 1; EIC Code: 4).

Example Fifty-Seven: (SEQ. 3-4, TEP 02R5, 5-11-83)

Initiation	Reply	Evaluation
0:31 T: IF YOUR TEACHER CAME INTO YOUR CLASSROOM AND YOU WERE OUT OF YOUR SEATS AND REALLY NOISY AND SHE DID THIS (places forefinger to her lips), WHAT WOULD THAT TELL YOU, MARY?	S: To be quiet.	T: To be quiet.
0:48 We have a special word for this, ANY IDEA WHAT THAT SPECIAL WORD MIGHT BE? We call them something. JIM?	Ss: Oo-oo (hands up) S: /NR/	T: NO IDEA? Okay.
BIANCA?	S: Signals?	T: Signals. Okay,
1:13		signals.

Example Fifty-Eight. When introducing the topic her lesson, "Following Directions in Sequence", Teacher 11 assesses students' understanding of why directions are important to follow (KT Code: A; STIC Code: 1; EIC Code: 4). In several instances in the data, this kind of interaction sequence early in lessons gave the teacher information about

student experiences that could be built upon later in lessons to develop conditional knowledge of when reading skill information would be useful.

Example Fifty-Eight: (SEQ 2, TEP 11R2, 12-9-82)

Initiation	Reply	Evaluation
0:28 T: IF YOU DON'T FOLLOW THE DIRECTIONS IN GAMES, WHAT HAPPENS?		
	S: You don't play right. S: You don't know where you're going.	
		T: Yeah, then you don't really know who wins or loses because / everybody makes their own rules as they go along, and who's to say who's following the rules to win the game.
0:43		

Example Fifty-Nine. This interaction sequence, from the Guided Practice phase of Teacher 19's "Guide Words" lesson, represents instances when this code was used in practice phases to assess student prior knowledge of words or terms used in practice examples (KT Code: A; STIC Code: 1; EIC Code: 4). In the sequence following this one, the teacher used the student's lack of experience with the term as a means to establish conditional knowledge about guide words.

Example Fifty-Nine: (SEQ. 9, TEP 19R2, 11-30-82)

Initiation	Reply	Evaluation
5:20 T: Okay now. Yesterday while you were watching the game with your mom and dad, something happened and one of the kickers, or the kicker missed a field goal...OKAY? / This is the word we're looking up. Field goal. LAURA, DO YOU KNOW WHAT A FIELD GOAL IS?		
	S: I do! (call out)	
	S: /NR/	
T: LAURA, DO YOU KNOW WHAT A FIELD GOAL IS?		
	S: /NR/	
		T: CAN YOU TALK? / YES OR NO?
	S: No.	
		T: Okay, Laura said that she does not know what a field goal is.
5:53		

Instructional Purpose Code: 7. The kinds of interaction sequences characterized by this code typically occurred in early lesson phases as illustrated by the following examples. In the lessons of several teachers, elicitations assessed student prior knowledge of skill information which had usually been covered in earlier skill lessons. Whatever students remembered could then be used as the starting point for the presentation of new or review information in the current lesson. Examples 60-64 show how

these sequences seemed to serve a purpose of allowing the teacher to establish inter-lesson cohesion.

Example Sixty. In this Guided Practice phase interaction, Teacher 04 assesses students' memory for skill terminology from previous lessons related to using dictionary skills before proceeding with additional practice tasks (KT Code: A; STIC Code: 2; EIC Code: 1).

Example Sixty: (SEQ. 6, TEP 04R5, 4-27-83)

Initiation	Reply	Evaluation
7:15 T: WHO REMEMBERS WHAT THE TWO WORDS AT THE TOP OF A GLOSSARY PAGE ARE CALLED?		
	Ss: Oooo-oooo (hands up)	T: Oh...three people, four, five, that's good. Those were hard. We just had this lesson.
LARRY?		
	S: Guide words.	
		T: Guide words. And you're really remembering a lot.
7:33		

Example Sixty-One. Earlier in the same lesson, Teacher 04 assesses students' prior conditional knowledge of dictionary (glossary) skills in her lesson's Introduction phase (KT Code: C; STIC Code: 2; EIC Code: 1).

Example Sixty-One: (SEQ. 5, TEP 04R5, 4-27-83)

Initiation	Reply	Evaluation
0:32 T: HOW CAN A GLOSSARY HELP YOU? JERRY?		
	S: It can help tell you the meanings of the words / like if you didn't know the meanings.	
		T: Alright.
ANYTHING ELSE THAT YOU CAN FIND IN A GLOSSARY? Jerry says you can look up the meanings of a word. DOES IT HELP YOU DO ANYTHING ELSE? SALLY?		
	S: Help you spell words.	
		T: Helps you spell words, good.
1:05		

Example Sixty-Two. After assessing students' real-life experiences with signals in her "Uses of the Apostrophe" lesson (see Example Fifty-Seven, p. ____), Teacher 02 begins the introductory transition to the skill topic by eliciting the term for signals used in reading.

Example Sixty-Two: (SEQ. 6, TEP 02R5, 5-11-83)

Initiation	Reply	Evaluation
1:49 T: Authors or writers use signals. CAN YOU THINK OF A WORD THAT WOULD TELL US WHAT THOSE KINDS OF SIGNALS ARE CALLED? When you are writing your lesson, you use signals. There is a special name for those signals. FRANK?		
	S: Punctuation marks.	
		T: Punctuation
2:17		marks, okay.

Example Sixty-Three. The following interaction sequence from Teacher 18's introductory lesson on "Using a Thesaurus for Synonyms and Antonyms" illustrates how teachers used assessment of students' prior knowledge of skill terminology as a starting point for new instruction (KT Code: A; STIC Code: 2; EIC Code: 1).

Example Sixty-Three: (SEQ. 5, TEP 18R2, 1-5-83)

Initiation	Reply	Evaluation
2:36 T: HOW MANY OF YOU HAVE NEVER HEARD THE WORD 'SYNONYM'?		
	Ss: /NR/	
T: HOW MANY OF YOU HAVE NEVER HEARD THE WORD 'ANTONYM'?		
	Ss: /NR/	
		T: Okay, so it's something that you are famil-
2:50		iar with.

Example Sixty-Four. In the final example of interaction sequences characterized by this assessment code, Teacher 18 illustrates how teachers elicited student prior knowledge of skill features as a way to present that kind of information to the group. In her lesson on "Letters that make the /F/ Sound", she presents a series of example words and asks different students to identify the letter combinations they already know which make the sound (KT Code: A; STIC Code: 3; EIC Code: 1). Building on the information obtained from this assessment, she continues her presentation of sounding rules and procedures for their use in an Interactive Presentation phase.

Example Sixty-Four: (SEQ. 9-15, TEP 18R3, 2-11-83)

Initiation	Reply	Evaluation
8:55 T: LOOK AT THE WORD 'LAUGH'. IN THE WORD LAUGH, WHAT MADE THE /F/ SOUND?		
	S: The g-h.	
		T: Thank you. The g-h, okay.
9:08 LET'S LOOK HERE, / 'FUNNY'. WHAT MAKES THE /F/ SOUND, GARY?		
	S: F?	
		T: F.
9:18 'STUFF' / WHAT MADE THE /F/ SOUND, WALT?		
	S: F-f.	
		T: Two f's together.
9:28 'NEPHEW', WHAT MADE THE /F/ SOUND, DICK?		
	S: P-h.	
		T: P-h, okay.
9:37 'ENOUGH', WHAT MADE THE /F/ SOUND, PAT?		
	S: G-h.	
		T: The g-h, which we have already written.
9:45 IN 'PHOTOGRAPH', BOB. WHAT MADE THE /F/?		
	S: G-h.	
		T: G-h, which we already have written.
9:52 HAVE I GOT THEM ALL?		
	S: Do you want	T: Not yet. / Okay, so what we have here are g-h's, f's, f-f's, and p-h's that may say /f/. OKAY?
10:10		

Instructional Purpose Code: 8. The following interaction sequences represent instances in the data where teachers used a combination of elicitations and evaluations to assist students in developing background information to better understand example topics. A particular kind of interaction sequence receiving this code involved extended oral reading. These sequences established common group content background for a practice activity by reading example text passages which were then used for a series of practice interactions, as shown in Example Sixty-Five. Oral reading sequences occurred most often in comprehension skill lessons where several group interactions were conducted based on a single text sample.

Example Sixty-Five. The following oral reading sequence leads Teacher 14's Guided Practice phase in her "Drawing Conclusions" lesson. Elicitations in these sequences were mostly academic task management directives. Because the focal point of the sequence was the text, these sequence were coded to reflect example content (KT Code: A; STIC Code: 3; EIC Code: 2). Developing group knowledge of passage content was a critical prerequisite for student success in responding to declarative information questions during subsequent practice using this skill.

Example Sixty-Five: (SEQ. 16, TEP 14R4, 3-7-83)

Initiation	Reply	Evaluation
11:59 T: LET'S HAVE ANOTHER TRY. LET'S READ THIS PARAGRAPH TOGETHER. You can read it to yourself and I'll read it out loud. // (reads) "Rene ran into the house waving a piece of paper saying / 'Look Dad, I did it! I got them all right!' She showed him. 'I spelled every word correctly, even mischief! I was afraid that I would mix up the 'i' and the 'e' but I didn't. All that studying this week was really worth it.' That's wonderful, Rene,' her father said. 'Why don't you show your paper to Grandma? She'll want to know how well you've done." 12:47	Ss: (several reading out loud)	T: READ IT TO YOURSELVES.

Example Sixty-Six. Teacher 11, in her "Prefixes for Word Meaning" lesson, assists students in developing meaning for several of the example words being altered with prefixes. In this Guided Practice phase interaction sequence, she helps students deduce the meaning of "dethrone" by guiding with elicitations and adjusting student responses in her elaborations (KT Code: A; STIC Code: 3; EIC Code: 2).

Example Sixty-Six: (SEQ. 21; TEP 11R4; 3-14-83)

Initiation	Reply	Evaluation
14:45 T: **ALRIGHT, WHAT HAPPENS WHEN SOMEONE IS DETHRONED?**		
	S: **(inaudible)**	
		T: **WHAT? / You've got the right idea, I think, a little sideways.**
BUT COME ON, SAY IT AGAIN, GINA, WHEN SOMEONE IS DETHRONED WHAT HAPPENS?		
	S: They're thrown off the house.	
		T: Well, you're not thrown off your house, YOU ARE THROWN...
	S: You're thrown off the throne.	
		T: Thrown off the throne.
DOES THAT MEAN SOMEBODY COMES UP THERE AND ACTUALLY SAYS, 'Alright, kind, that's it. Get off.'?		
	Ss: No	
T: **ALRIGHT, REMEMBER WHAT I SAID? The throne is a symbol of your authority. SO IF THEY'RE DETRHRONED, WHAT HAPPENS TO THEM?**		
	S: They're kicked out.	
		T: **They're kicked off the throne means they are removed as the king or queen of the country.** Alright.
15:34		

Example Sixty-Seven. In another example from the same lesson, Teacher 11 uses elicitations focused on students' prior knowledge to assist students in developing informational meaning for example words (KT Code: A; STIC Code: 3; EIC Code: 2).

Example Sixty-Seven: (SEQ. 24, TEP 11R4, 3-14-83)

Initiation	Reply	Evaluation
16:11 T: LAST PAIR OF WORDS... ROCHELLE?		
	Ss: Oo-oo S: Hale	
		T: Hale.
IS THIS THE KIND THAT FALLS DOWN FROM THE SKY? / THE LITTLE HARD ROCKS?		
	S: No, when you breathe.	
		T: Alright, when you breathe. Breathing.
ALRIGHT, WHEN I BREATHE IN, I...?		
	Ss: Inhale.	
		T: Inhale.
WHEN I BREATHE OUT I...?		
	Ss: Exhale.	
		T: Exhale. That's right. Oh, good, we got that together.
16:38		

Instructional Purpose Code: 9. This code identified interaction sequences that functioned to assist students with development of background knowledge about the skill topic or related skill information needed to negotiate the current lesson successfully. While most of the instructional sequences providing this kind of assistance were Teacher Monologue in form (i.e., no interaction with students and, therefore, not analyzed with this coding scheme), there were instances of interaction sequences in the data that served this function. In interactions of this kind, teachers seemed to have a predetermined agenda of information they wished to establish before proceeding with the lesson. Teacher feedback to student responses in these sequences suggested teachers were not focused as much on assessment of students' prior skill knowledge as they were on using student responses or reactions to justify the need for more extended elaborations in which they could share information. The following interaction sequences illustrate instances of this kind of assistance.

Example Sixty-Eight. In the following pair of interaction sequences in the Guided Practice phase of her lesson on "Alphabetizing", Teacher 04 uses students' responses to her elicitations to set up first and second letter alphabetization as background for introducing use of the third letter to arrange words in order (KT Code: B; STIC Code: 2; EIC Code: 1).

Example Sixty-Eight: (SEQ. 12-13, TEP 04R3, 2-15-83)

Initiation	Reply	Evaluation
5:15 T: Suppose the words were /(pause to write words on board)/ Suppose those were the four words. WHAT WOULD YOU HAVE TO DO NOW? SANDY?		
	S: Go to the second letter.	
		T: We'd have to look at the second letter.
BECAUSE THEY ALL START WITH....		
	Ss: m (unison)	
		T: M. DON'T USE THAT FIRST M. GO THE THE SECOND LETTER.
5:47 Now with the second letter...oh-oh, LOOK WHAT HAPPENED / TO SOME WORDS, WHAT WILL HAPPEN? P.J.?		
	S: Some will all have the same, and then one's longer.	
		T: Nooooo...
SUSAN?		
	S: You have / like you got to go to the fourth.	
		T: You're almost right. The two bottom ones are alike. And so the second letter's alike,

Example Sixty-Eight (cont'd.)

Initiation	Reply	Evaluation
SO WHAT DO YOU HAVE TO DO SUSAN?		
	S: Go to the third?	
		T: On that one we're going to have to use the third letter.
6:20		

Example Sixty-Nine. In a Teacher Interactive Monologue sequence in the Introduction phase of her lesson on "Apostrophes used for possessives", Teacher 22 reminds students about a previous lesson on context clues as a way of helping them develop background for understanding the usefulness of the skill they will learn in the upcoming lesson (KT Code: C; STIC Code: 2; EIC Code: 1).

Example Sixty-Nine: (SEQ. 4, TEP 22R4, 3-8-83)

Initiation	Reply	Evaluation
1:36 T: **WHAT DO WE DO WHEN THERE'S A WORD, REMEMBER WE TALKED ABOUT MY CLASSIC EXAMPLE OF THE WORD 'BAY'?**		
	Ss: **Umhum...**	
And it was talking about a horse / and I said, what kind of horse had to do with a body of water. HOW DID WE FIGURE OUT WHAT THEY REALLY MEANT THERE? WHAT DID WE DO? / We used something. Some kind of clue. REMEMBER?		
	Ss: /NR/	
		T: Context clues. DO YOU REMEMBER THAT?
	Ss: Ohh. Yes..	
WHAT IS THAT? HOW DO WE DO THAT? We just did it last week. We had some words that we weren't too sure about, so we went to the dictionary. No, we didn't go anywhere	S: We read the sentence.	
		T: Yes. We read how it was <u>used</u> in the story or in the sentence and we figured it out. We call that context, how it was being <u>used</u>.

Example Sixty-Nine (cont'd.)

Initiation	Reply	Evaluation
AND SURE ENOUGH, WE FIGURED IT OUT, DIDN'T WE?		
	Ss: Ummm. Yes.	
		T: And you did it without using the dictionary. I didn't tell you what it meant. Okay, so we've got some pretty good skills on how to figure out how to say words and smoe skills on how to understand what words mean in a story. We've also worked on how to figure out when things happen in a story.
2:52		

Example Seventy. This example illustrates how teachers might use occasions during practice phases to interject background information needed to understand skill use. Teacher 11 digresses from practice in her lesson on "Suffixes: -er and-ment" to establish student background about parts of speech as it relates to deriving word meaning from the use of suffixes (sequence beginning at 3:47: KT Code: A; STIC Code: 3; EIC Code: 2). She structures the presentation of declarative information in this extended sequence around the example. 'pavement', introduced in prior sequence.

Example Seventy: (SEQ. 8, TEP 11R3, 1-24-83)

Initiation	Reply	Evaluation
3:35 T: ALRIGHT, WHAT HAVE I DONE TO MY WORD 'PAVE' JACKIE?		
	S: You put a ment on it?	
		T: I put a ment on it. That's right.
3:47 WHAT HAS HAPPENED TO THIS WORD? UP HERE WE SAID IT WAS A VERB, WASN'T IT? / It was an action word. IS IT STILL A VERB DOWN HERE? / WHAT'S HAP-PENED TO IT? WHAT HAS IT BECOME?		
	S: Compound	
		T: It's not a compound because ment is not a word on its own.
WHAT KIND OF A WORD IS IT?		
	S: Adjective.	
		T: DOES IT DESCRIBE? /
TORY?		
	S: A noun.	
		T: A noun. It's the name of something, the <u>pavement</u>.
CAN YOU FEEL IT?		
	Ss: No.	
CAN YOU SEE IT?		
	Ss: Yes.	
CAN YOU TOUCH IT?		
	Ss: Yes.	
		T: Yes, you do. If you walk on it, you feel it. Alright, it
4:34		became a thing.

Instructional Purpose Codes 10 and 11. As would be expected given findings from recent classroom observational research on reading lessons (Duffy & McIntyre, 1982; Durkin, 1978-79), there were numerous interaction sequences in the data that dealt with lesson task procedures, directions or management (STIC Code: 4; EIC Code: 3). These sequences occurred most often near the beginning or end of phases. Several teachers' lesson introductions and closures were focused heavily on interactions of this type. When internal to lessons, academic management and task procedure sequences were associated with setting up group practice activity tasks or independent seatwork. They were usually coded with Knowledge Type Code D to reflect their focus on the kind of general knowledge students needed to successfully perform the group and independent practice tasks that characterized these skill lessons.

These purpose codes described interaction sequences with academic management content as either assessment-oriented (Code 10) or assistance-oriented (Code 11). In sequences characterized by the assessment code, teachers evaluated student knowledge of how to perform activity task procedures or follow directions. In sequences analyzed with the assistance code, teachers' directives usually contained the information students needed to successfully perform lessons tasks. Sequences with these codes were often adjacent to each other within phases. The following examples respresent interaction sequences receiving these codes.

Example Seventy-One. In the Introduction phase of her lesson on "Suffixes", Teacher 11 assesses a student's general readiness to begin the lesson.

Example Seventy-One: (SEQ. 1, 11R3, 1-24-83)

Initiation	Reply	Evaluation
0:00 T: LET'S EVERYBODY LOOK UP HERE RIGHT NOW. // YOU GOT YOUR NAME ON THE BOTTOM SHEET OF YOUR PACKET?	Ss: (talking and rusting papers)	T: GARY, PUT YOUR NAME DOWN THERE. No orphans.
	S: I didn't get my packet.	T: (gets materials for student)
0:28		

Example Seventy-Two. Teacher 07 begins her lesson on "Short Vowels" by first providing task assistance to the group by having worksheet directions read orally. In the next sequence she assesses student knowledge of those directions.

Example Seventy-Two: (SEQ. 2-3, TEP 07R1, 10-25-82)

Initiation	Reply	Evaluation
1:25 T: LET'S TAKE A LOOK AT THE DIRECTIONS AT THE TOP OF YOUR SHEET. ALRIGHT, TROY, WOULD YOU READ THE DIRECTIONS PLEASE?		
	S: (reads) The underlined words in each sentence is a contraction (inaudible)	
		T: The words in the box are those words at the top. We got are, not, is and will Those are words in the box.
2:17 WHO CAN TELL ME IN THEIR OWN WORDS, WHAT YOU'RE SUPPOSED TO DO ON THIS PAPER? / CHRIS, TELL ME WHAT YOU'RE SUPPOSED TO DO ON THIS PAPER.		
	S: Read the sentences and write the two words that make contractions.	
		T: TELL ME IN YOUR OWN WORDS. I don't want you to read it.
	S: (inaudible)	
		T: Alright, that's why you have the two lines over there on the side.
3:00		

Example Seventy-Three. Prior to beginning group Recitation Practice using examples from a worksheet on synonyms and anyonyms, Teacher 20 assesses student knowledge of how to record answers correctly.

Example Seventy-Three: (SEQ. 10, TEP 20R4, 3-18-83)

Initiation	Reply	Evaluation
5:55 T: NOW ON YOUR WORKSHEET YOU ARE TO WRITE 'S' IN THE BLANK THAT HAS... / WHERE THE TWO WORDS ARE WHAT?		
	S: Same	
		T: Same or WHAT WORDS?
	Ss: (inaudible)	
		T: Synonyms.
AND YOU ARE TO WRITE 'A' BESIDE THE TWO WORDS THAT ARE WHAT?		
	Ss: Antonyms	
		T: Antonyms.
6:19		Alright.

Example Seventy-Four. Teacher 08 frequently embedded independent practice opportunities within the Guided Practice phase of her lesson on "Reading for Details". The following pair of predominantly directive-oriented interaction sequences illustrates how teachers coupled task management assessment and assistance interactions when seatwork activities were embedded within other phases.

Example Seventy-Four: (SEQ. 21-22, TEP 08R4, 3-3-83)

Initiation	Reply	Evaluation
18:14 T: Okay, I'm going to reverse the question, PUT THE FINGERS DOWN, AND PUT THE HANDS UP IF YOU'RE NOT DONE READING YET. //	Ss: (restless noises)	
18:22 Alright, now on the back of your paper / PLEASE NUMBER ONE THROUGH SIX. ANSWER YES OR NO TO THESE QUESTIONS. I'm going to read them to you right now.	S: Write (inaudible)?	T: One through six and all you have to write is yes or no like a true-false quiz. Yes or no.
18:45 (long pause follows - 73 seconds)		

Example Seventy-Five. This example sequence shows how Teacher 01 provides students with very explicit seatwork task information in the form of a series of directives issued during group lesson closure. As she speaks, students' respond by beginning work on the practice sheet. This kind of interaction sequence was common in the skill lessons analyzed.

Example Seventy-Five: (SEQ. 45, TEP 01R2, 12-8-83)

Initiation	Reply	Evaluation
26:44 T: **AS I PASS BY / WRITE - THE - WORD. It must be written. LOOK DOWN AT THE BOTTOM OF YOUR PAGE. You're choosing the words from down there. CUR-SIVE-LY. In cursive writing. WRITE ONLY** THE WORDS FROM THE BOTTOM OF THE PAGE AND PLACE THEM IN THE APPROPRIATE BOXES. / CAN YOU SEE THEM DOWN THERE?	Ss: Yes Umhum	
27:29		T: Alright.

Example Seventy-Six. When assisting students with task procedures for practice sheets, teachers often allowed the group to do the first few practice items together to ensure understanding of the activity. This practice is illustrated in the Closure phase of Teacher 21's "Prefixes" lesson.

Example Seventy-Six: (SEQ. 30, TEP 20R5, 3-31-83)

Initiation	Reply	Evaluation
8:51 T: Okay, on this part on your paper / YOU'RE GOING TO PUT NUMBER ONE, THE OPPOSITE OF HONEST, AND THEN WRITE THE WORD WHICH IS...		
	Ss: (unison) dishonest.	
		T: Dishonest.
NUMBER TWO, NOT CERTAIN.		
	S: Uncertain.	
		T: Unsure. Okay.
UNDERSTAND HOW TO DO THAT?		
	S: Yeah	
		T: And then you're going to / / PUT A LINE UNDER HONEST, AND TWO LINES UNDER DIS.
WHEN YOU COME OVER HERE, YOU WRITE DOWN THE MEANING, THEN ADD THE PREFIX AND WRITE THE MEANING FOR THE WORD WITH THE PREFIX ADDED TO IT.		
9:32		

Instructional Purpose Code: 12. The final coding category for interaction sequence instructional purpose was a catch-all for teacher-student interactions that were not directly related to processing lesson content or to accomplishing the stated lesson activity tasks. Teacher elicitations in sequences of this type generally dealt with the logistics of class or environment management, or with correcting inappropriate student behavior. This code was used

relatively infrequently in the data analysis. Because of the presence of an outside observer during the lesson, "routine" or spontaneous teacher behavior may have been inhibited. The following example sequences illustrate use of this code.

Example Seventy-Seven. Prior to beginning the Guided Practice phase in one of her lessons, Teacher 04 observes that a few students are having difficulty seeing the board because of glare from the sun.

Example Seventy-Seven: (SEQ. 9, TEP 04R5, 4-27-83)

Initiation	Reply	Evaluation
3:00 T: //(writing on the board)/ CAN YOU SEE THOSE DEBBIE? FRED?		
	Ss: Um-um. No	
		T: That's probably because of the sun too. /
Let's see if I can cut that glare a bit. (lowers the shade) IS THAT BETTER?		
	Ss: Umhum	
3:24		

Example Seventy-Eight. In this example, Teacher 18 begins her lesson by calling for the group's attention. When she fails to get it quickly, she singles out a few students who are behaving inappropriately. Although there were behavior management elicitations (E-9) interspersed more frequently in some teachers' lesson interactions than in others, the identification of entire interaction sequences

devoted to behavior management was random in this sample of skill lessons. When sequences of this kind did occur, however, they seemed to disrupt the teacher's pacing of the lesson.

Example Seventy-Eight: (SEQ. 1, TEP 18R5, 3-23-83)

Initiation	Reply	Evaluation
0:00 T: Okay. IF I CAN HAVE YOUR ATTETNTION TODAY, PLEASE. // KEN, MAY I ASK YOU A QUESTION? It's just kind of an aside here. WHY IS IT, THAT WHEN YOU AND HE DON'T GET ALONG, EVERYTIME HE CHANGES SEATS, YOU'RE BEHIND HIM.		
	S: I was...	
	S: I was not. I was here first.	
		T: I'D LIKE YOU TO MOVE OVER HERE, OR DOWN HERE. EITHER ONE. / To keep peace in the family. Not saying there's any problems, but I don't want one either. / HURRY JIM, you had a whole seven minutes to do that. Why you decide to do it now / I don't know.
0:39		

APPENDIX 3E

SAMPLE FORM FOR LESSON MAP CONSTRUCTION

Coded information from the reformatted transcripts was transferred onto this record of lesson events.

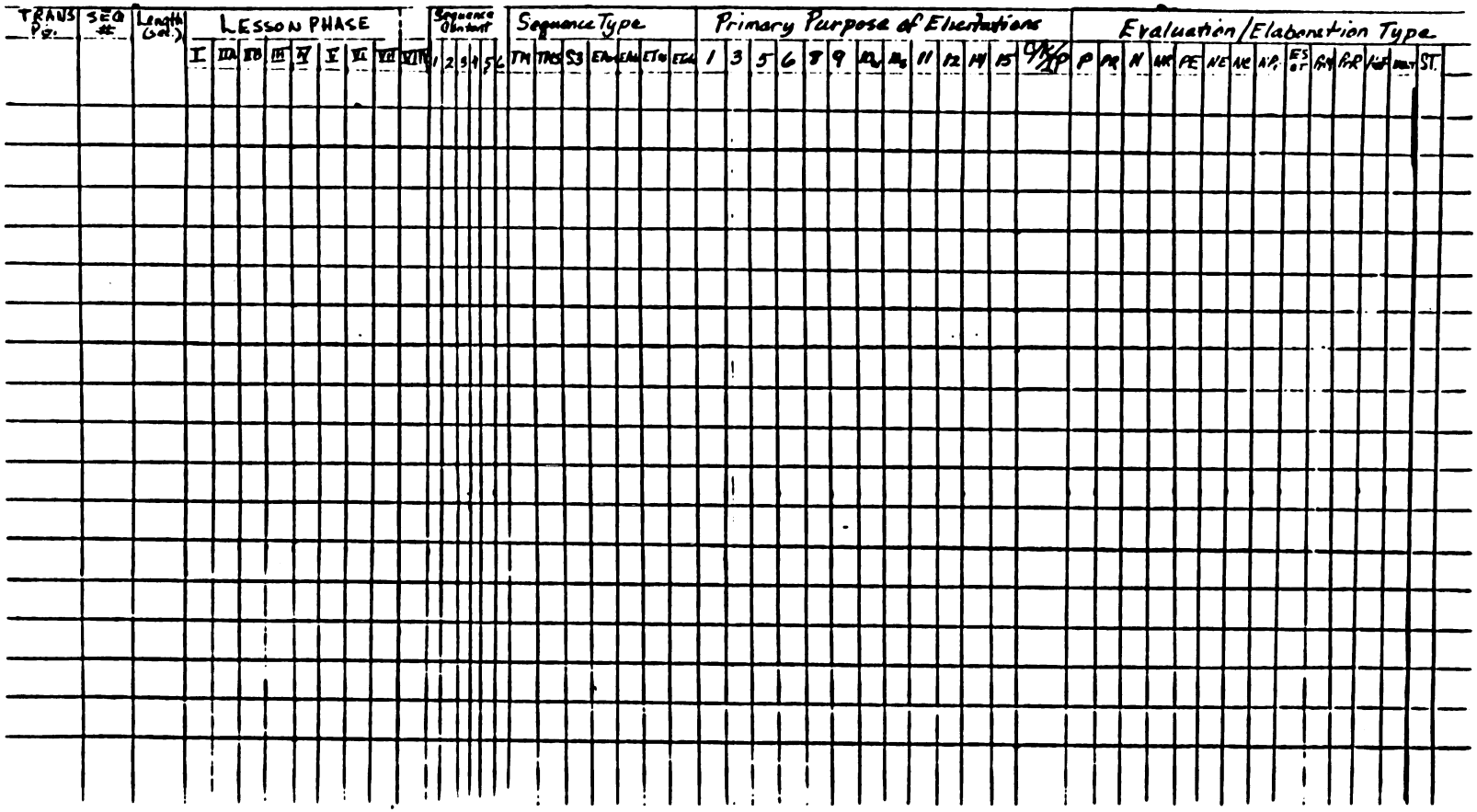
APPENDIX 3E

SAMPLE FORM FOR LESSON MAP CONSTRUCTION

Teacher____ Lesson____ Topic_____ TOTAL LENGTH(min)_____

SKILL CAT. _____

Page____



APPENDIX 3F

SAMPLE VISUAL LESSON MAPS FOR TWELVE TEACHERS

Skill lesson profiles for the perceived "best" lessons taught by the six more effective and six less effective teachers in the sample.

An example visual lesson profile has been included to represent one lesson taught by each teacher.

Appendices 3F.1 - More Effective Teachers
Appendices 3F.2 - Less Effective Teachers

APPENDIX 3F.1

More Effective Teachers' Lesson Profiles

APPENDIX 3F.1

MORE EFFECTIVE TEACHERS' LESSON PROFILES

Teacher 18 Date 3-23-83 Lesson 5 Topic: Locating Topics w/ Encyclopedia Keywords

TIME RECORD •= 1 minute (3/8 inch) | T = Teacher, S = Student | I = Initiation, R = Reply, Ø = optional | Ev = Evaluation, El = Elaboration

The Reading Period: Position of the Skill Lesson: Beginning of reading period after classes change. Lesson is followed by independent practice with a worksheet on skill taught.

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = 29 min. 2 (sec.))

I. ENTIRE LESSON — TIME	1:30	10:54	2:24	5:03	2:34	6:12	
PRINCIPAL LESSON PHASE	Introduction	Presentation - Interactive	Presentation Model	Guided Practice	Recitation Practice	Review	Closure
PRIMARY DISCOURSE: Phase Tasks	Introduce lesson topic	Describe features of encyclopedia = establish common background about skill	Show how to perform skill task	Verbal Practice with Elaboration and feedback	Verbal practice to assess mastery and clarify task	Refocus on skill & student understanding of information about the skill and task	Set-up ind. practice task
Transcript Lines	16	125	16	71	33	96	
TIME (sec.)	39, 51	35, 38, 34, 83, 56, 51, 58, 82, 63, 10, 67	44, 69	52, 63, 61, 34, 68	69, 42, 43	64, 41, 117	49, 30
SECONDARY DISCOURSE: Instructional Sequence	1, 2	3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	16, 17	18, 19, 20, 21, 22, 23, 24	25, 26, 27	28, 29, 30, 31, 32, 33, 34, 35, 36	37
Topics	5, 2	½, 2, ½, ½, 2, ½, 2, ½, 2, 4, 2, 2, 4	2, 8	3, 4, 3, 3, 1, 3, 5 →	→	2 →, 2 →	4
Transcript Lines	8, 9	12, 8, 6, 14, 3, 10, 13, 4, 8, 3, 10, 13, 11	4, 10	13, 3, 5, 12, 3, 9, 6	14, 10, 9	15, 3, 9, 5, 15, 15, 26	13
II. Secondary Discourse Features — Sequence Type	E, D	A → D, A, A, D	B, B	A, D, B, B, E, B, B	B →	C, B, B	D
Sequence Organization	SS, THS	EIds, THS, EIds, EIds, SS, EAss, EIds, EIds, THS, SS EIds, TH(s) SQ, EAss	TM(s), EIss TM	EAss, SS, EAss, EAss, SS, EAss, THS	EAss →	EISS, SS, EAss, EAds, EAss SQ, EAds	TH
Sequence Purpose	12	7, 9, 7, 7, S Q, 9, 7, 7, 9, 7, 9 SQ, SQ 12	9, 9	9, S 7, 3, 12, 3, 9	2, 5, 5	2, 2, 7, 7, 7, 2, 9	11
Elicitations Purpose	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3, 9
Verbal Participants	T S, T	T S → T, T S →	T, T S	T S →, T (S)	T S →	T S → T S →	T
Primary Verbal Roles	Ask/Tell, Direct Tell Ask	Ask Tell → Tell, Tell Ask, Tell, Tell	Tell, Ask Tell	Tell Ask, Ask →, Tell	Ask → Tell →	Ask →, Tell →, Ask Tell, Tell Ask	Direct Tell

Teacher 19 Date 2-28-83 Lesson 4 Topic: Respellings

TIME RECORD 0 = 1 minute (3/4 inch) | T = Teacher S = Student | I = Initiation R = Reply Ø = optional | Ev = Evaluation El = Elaboration

The Reading Period: Position of the Skill Lesson: Beginning of reading period. Followed by independent practice

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = min. sec.)

I. ENTIRE LESSON

TIME (0:0)	2:13 (2:13)	1:57 (4:10)	:58 (5:08)	2:27 (7:35)	6:46 (14:21)	6:29 (20:50)	
PRINCIPAL LESSON PHASE	Introduction	Present-Model	Transition: Extended example	Review	Guided Practice	Closure	Independent Practice →
PRIMARY DISCOURSE: Phase Tasks	Present new reading text; introduce lesson topic + procedure	Model how to do skill; state usefulness	show process of example	Assess student knowledge of skill info.	Use of examples to practice using skill; elaboration noting how skill strategy used	Present independent seatwork practice task; state task expectations; clarify skill use	
Transcript Lines	33	26	19	53	117	61	

SECONDARY DISCOURSE: Instructional Sequence Topics

Sequence	1	2	3	4	5–6	7	8	9	10	11	12	13	14	15	P	16–18	19	P	20
TIME (sec.)	55	45	117	58	[illegible]	57	37	42	83	95	67	146	62	33	87	[illegible]	69		38
Topics	4	2	2	2	2 →				4 (P = 27 within)	3 →			3 → (P = 30 within)			[illegible]	3	START IND. PRACTICE	4
Transcript Lines	21	12	26	19	13	23	12	13	9	34	22	45	8	8	8	5 5 5	19	P	7

II. Secondary Discourse Features

Sequence	1	2	3	4	5–6	7	8	9	10	11	12	13	14	15	P	16–18	19	P	20
Sequence Type	D →		B →		[illegible]	B	A	D	D	A →			D	D	P	D A [illegible]	B	P	D
Sequence Organization	TMS	TM	TM	EIds	[illegible]	EIds	EAds	TMS	TMS	EIds →			TMS	EAds		TMS [illegible]	ESs		TM
Sequence Purpose	11			5	→	1	11		10	1	1	5	11	"		11 [illegible]	2		
Elicitations Purpose	(8)	(9)	12,14,15	6 8,14,15	[illegible]	(1)	(1) 9 [illegible]	1	(8) 6 12	(1) 3 6 8 (8) 11 12	(1) 11 [illegible]	(1) 6 8 9 11 14 15	1 (8) 14			[illegible]	(8) 9 11 14 15	Teacher talking to indiv. as she circulates	6
Verbal Participants	TS	T	T												P			P	T
Primary Verbal Roles	Direct Tell → / Tell		Tell	Ask → / Tell →				Tell Ask / Tell	Direct Tell / -	Ask Tell → / Tell →			Direct Tell / Tell	Tell / Ask		[illegible]	Tell Ask Tell / Tell		Direct Tell / -

Teacher 01 Date 12-8-82 Lesson 2 Topic: Decoding Unkn. Words (4 ways)

TIME RECORD • = 1 minute (1/4 inch) | T = Teacher, S = Student | I = Initiation, R = Reply, Ø = optional | Ev = Evaluation, El = Elaboration

The Reading Period: Position of the Skill Lesson — Beginning of Reading Period (a 1 hr. 15 min. block)

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = 28 min. 06 sec.)

I. ENTIRE LESSON

TIME	3:18	4:07	2:25	:13	:47	3:32	2:20	1:35	7:11	1:39	30
PRINCIPAL LESSON PHASE	Introduction	Presentation-Monologue (mostly)	Presentation Interactive	Guided Practice	Review	Guided Practice	Review	Guided Practice	Presentation of Practice-Interactive	Closure	Independent Practice
PRIMARY DISCOURSE: Phase Tasks	Organize seating & materials for lesson; overview lesson; state topic	Explain 4 decoding strategies [rate answers checked as explaining-attentional]	Use example to show how skill works	Practice of sub.	Reasons for ...	Use of skill w/ examples; Qs in sequence to show as a strategy	Elicit usefulness of skill	Same	Introduce worksheet and corresponding B.B for clues; assess understanding of directions and skill of examples	State directions for seatwork on skill	→
Transcript Lines	41	67	40	27	26	76	61	43	80	30	

II. Secondary Discourse Features (selected instructional sequences)

SECONDARY DISCOURSE: Instructional Sequence	1	2	4	5	6	8	15	17	18	27	28	29
TIME (sec.)	110	83	73	79	79	125	100	36	55	95	28	63
Topics	4	→	2	→	→	3	3	→	→	3	4 (incl. P=50)	4 (P=15)
Transcript Lines	20	19	16	23	1	34	30	11	23	43	5	7
Sequence Type	D	→	B	→	→	B	A	→	→	A	D	D
Sequence Organization	THS	TH	THS	THS	TH	EAds	→	EIds	→	EIds	THS	→
Sequence Purpose	11		9	5	·	5	3	4	3	3	11	11
Elicitations Purpose	④ 15, R	15	–	① 9	–	① 12, N	① 3,6,9 R	① R	① 8	① 3,9 11,15	③ N	③ 9
Verbal Participants	T S	T	T S	→	T	T S				T S	T	T(s)
Primary Verbal Roles	Direct Ask / Tell	Tell	Tell Ask / Tell	→	Tell	Tell Ask / Tell				Ask / Tell	Direct / –	Ask

Teacher 14 Date 4-21-83 Lesson 5 Topic: Prere: Base Words/ Prefixes, Suffixes

TIME RECORD = 1 minute (3/4 inch) | T = Teacher, S = Student | I = Initiation, R = Reply, Ø = optional | Ev = Evaluation, El = Elaboration

The Reading Period: Position of the Skill Lesson — First Group of Period

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = 39 min 57 sec.)

I. ENTIRE LESSON

TIME	Principal Lesson Phase	Primary Discourse: Phase Tasks	Transcript Lines
2:12	I Introduction	Establish prior skill knowledge	16
1:17	II-A Pres.- Exp.	Explain & Model strategy	14
1:44	II-P Interactive Pres.	Review modeled strategy	30
1:18	III Guided Pract.	Provide task (complete suffixes)	12
1:52	VII Review	Refocus on strategy knowledge	35
9:32	III Guided Practice	Practice with Elaboration and Feedback; T supplies examples on board	120
:46	Prep	Distribute worksheet	
5:11	VII Review	Refocus on strategy knowledge	81
1:06	IV Prep.	Directions for practice	11
2:17	V Independent Practice	Complete practice items on worksheet	2-PAUSE
4:12	IV Recitation Practice	Practice verbal use of strategy to support worksheet answers	59
3:25	VII Review	Refocus on strategy	48
:52	Closure	Wrap up lesson	19
		Total	447

Secondary Discourse: Instructional Sequence Topics; Transcript Lines; TIME (SEC.)

II. Secondary Discourse Features

Sequence Type; Sequence Organization; Sequence Purpose; Elicitations Purpose; Verbal Participants; Primary Verbal Roles

Teacher 04 Date 2-15-83 Lesson 3 Topic: Alphabetizing

TIME RECORD •= 1 minute (3/8 inch) | T = Teacher S = Student | I = Initiation R = Reply Ø = Optional | Ev = Evaluation El = Elaboration

The Reading Period: Position of the Skill Lesson — First group to meet during reading period

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = 8 min. 17 sec.)

I. ENTIRE LESSON

TIME	0:0	2:25	3:58	:28	10 · 15 · 20 · 25 · 30
PRINCIPAL LESSON PHASE	Intro	Presentation-Interactive	Guided Practice	Closure	Seatwork using Board →
PRIMARY DISCOURSE: Phase Tasks	Skill topic	Elicits info about skill; focuses on usefulness of skill	Verbal practice of sets of words; focus on features of skill and how to do it; elaboration	Directions for ind. practice	
Transcript Lines	7	61	69	9	
TIME		169	62		10 · 15 · 20 · 25 · 30
SECONDARY DISCOURSE: Instructional Sequence Topics		6 / 3	7 / 2	4	
Transcript Lines	4	51	15 · 6 · 13 · 10	5 · 9	

II. Secondary Discourse Features

Sequence Type		A	B · B · A	D · D	
Sequence Organization		EIEls →	EIEls		
Sequence Purpose		7	9 · 9		
Elicitations Purpose					
Verbal Participants		→	T—S		
Primary Verbal Roles		Ask · Tell	Ask · Tell		

Teacher 22 Date 3-8-83 Lesson 5 Topic: Context Clues

TIME RECORD •= 1 minute (1/4 inch) | T = Teacher S = Student | I = Initiation R = Reply Ø = optional | Ev = Evaluation El = Elaboration

The Reading Period: Position of the Skill Lesson — Beginning of reading period following general directions to both groups. Lesson followed by independent seatwork while teacher works w/ high group.

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = 37 min. 25 sec.)

TIME	3:50	1:50	2:19	8:59	13:31	[illegible]	4:14
PRINCIPAL LESSON PHASE	Introduction	Presentation Interactive (same)	Presentation Monologue	Guided Practice	Recitation Practice	Review	Closure
PRIMARY DISCOURSE: Phase Tasks	State topic; assess student knowledge and clarify w/ focus on today's lesson	Explain lesson task and general worksheet directions	Explain how to do skill w/ example	Verbal practice using worksheet examples, oral reading by teacher correction followed by teacher eliciting clues and elaborating on responses toward determining word meanings.	Verbal practice with examples continues with less elaboration and more assessment of student understanding of skill task. Teacher places in silent reading, asking students how they decided answers	[illegible]	Introduces new worksheet on similar task; explains directions; assess student understanding of [illegible]
Transcript Lines	40	19	21	121	134	[illegible]	45

I. ENTIRE LESSON

SECONDARY DISCOURSE: Instructional Sequence Topics; Transcript Lines; Sequence Type; Sequence Organization; Sequence Purpose; Elicitations Purpose; Verbal Participants; Primary Verbal Roles

II Secondary Discourse Features

APPENDIX 3F.2

Less Effective Teachers' Lesson Profiles

APPENDIX 3F.2

LESS EFFECTIVE TEACHERS' LESSON PROFILES

Teacher 11 Date 12-9-82 Lesson 2 Topic: Sequencing Directions

TIME RECORD •= 1 minute (5/8 inch) | T = Teacher S = Student | I = Initiation R = Reply Ø = optional | Ev = Evaluation El = Elaboration

The Reading Period: Position of the Skill Lesson: Beginning of Reading Period. Lesson followed by story lesson with small groups and independent seatwork

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = 19 min. 50 sec.)

I. ENTIRE LESSON

TIME	0:0 – 1:10	:52	1:59	5:47	9:46	:16
PRINCIPAL LESSON PHASE	Intro	Presentation Model	Presentation Interact	Guided Practice	Recitation Practice	Closure
PRIMARY DISCOURSE: Phase Tasks	state topic; examples; structure of any importance	Describe diff. kinds of directions	Describe impt. features	Use of examples from worksheet; teacher provides elaborations to student responses	Verbal practice with worksheet continues with less elaboration; assess student understanding of task and use of skill on worksheet	Direct students to finish worksheet. Call small group
Transcript Lines	22	10	16	93	154	13

TIME	[illegible]	[illegible]	[illegible]	52	[illegible]	[illegible]	[illegible]	47	120	53	[illegible]	41	37	[illegible]	47	[illegible]	85	38	[illegible]	1:25	38	73	[illegible]	20 … 25 … 30
SECONDARY DISCOURSE: Instructional Sequence	1	2	3	4	5	6	7–11	12	13	14	15	16	17	18–19	20	21	22	23–24		25	26	27	28	
Topics	2	1	1	4	2	3	1 5 1 4	→	→	→	4	→	→	→	5	4	→	→	→	→	→	→		
Transcript Lines	9	5	22	10	11	3	5 3 26 4	30	35	8	6	9	12	[illegible]	14	4	22	13 7		22	8	30	[illegible]	

II. Secondary Discourse Features

Sequence Type	A →	D	A	→ D A E D D	A	D →	D	A	A	D	E	A →							D D
Sequence Organization	TM / S3	TM	EIds	TM S3	EAss	EIds	S3	EAss	EAds	EIds	EIds	S3	EIds	EAds / EEds	→	S3	EIds		EAds TM
Sequence Purpose	6 7	7	7	6 6	5	11	10	10	7	7	6	12	10 →				11		6 2
Elicitations Purpose	[illegible]	①	9 18	[illegible]	1,6,9	⑥,3,6, 9,12,15 SQ	6,9,12,15	12	① 8	12 NIE	①	6,9,15	② 6,17	③ 9	① 6 8 12,14,15	① 6,9	① 15		① 6
Verbal Participants	T S	T	T S	T S → T	T S →			T S	→										T
Primary Verbal Roles	Tell	Rll	Ask / Tell	Ask / Tell	Ask / Read Tell	Ask / Read Tell (Ask)	Ask / Tell	Ask / Tell	→	Ask Tell	→	Ask / Tell	Direct Ask / Tell	Ask / Tell →					Direct

Teacher 02 Date 2-2-83 Lesson 3 Topic: Prefixes (meaning)

TIME RECORD: 1 minute (1/2 inch)

T = Teacher, S = Student

I = Initiation, R = Reply, Ø = optional

Ev = Evaluation, El = Elaboration

The Reading Period's Position of the Skill Lesson: Follows spelling lesson. Independent Seatwork follows lesson when teacher works w/ high reading group

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = 23 min 00 sec.)

I. ENTIRE LESSON

TIME	PRINCIPAL LESSON PHASE	PRIMARY DISCOURSE: Phase Tasks	Transcript Lines
:49	Intro	[illegible]	5
7:32	Presentation-Interactive	Elicit definition of prefix to state features; uses riddle as example to show importance of meaning feature; digression to homonyms	90
[illegible]	Recitation Practice	Elicit examples [illegible]	16
[illegible]	Review	Assess definition of prefix	9
2:45	Recitation Practice	Elicit meanings of prefixes in isolation and example words	39
[illegible]	Review	Assess understanding of [illegible]	6
2:29	Recitation Practice	Elicit meaning of certain prefixes (in isolation) and meaning of 2 examples	44
:11	Review	Assess know. of definition and placement	12
2:43	Recitation Practice	Assess of understdg. of worksheet task; incl. give directions	34
3:11	Closure	Assess/review definition and example understg.; state ind. practice dir.	25
23:00	Independent Seatwork →		

TIME (secondary): 49, [illegible], 61, [illegible], [illegible], 48, 31, [illegible], 126, 34, [illegible], 48, 40, 55, 15, 93, 37, 45, 58, [illegible], 71, 54, 6, 84, 4, 26, 56, 111 … 25 … 30

SECONDARY DISCOURSE: Instructional Sequence Topics: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14–17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36

Topics: 4, 2 →, 3, 3, 3 →, 2, 2 →, 2, 3, 2, 3 →, 2, 2, 3 →, 2, 4 →, 1, 2, 3

Transcript Lines: 5, 3, 11, 5, 3, 8, 3, 2, 18, 3, 3, 9, 14, 9, 8, 21, 10, 4, 12, 6, 7, 5, 3, 12, 7, 3, 6, 12, 2, 9, 12, 4

II. SECONDARY DISCOURSE FEATURES

Sequence Type: D, A →, A, A →, A, A →, A, D, A → D, B, A, D

Sequence Organization: TM, S3, EIds, S3, EIds, S3 →, EIds, S3 →, EIds, EIds, EIds →, S3, EIds, EIds →, S3 →, EIds, TM, EIds →, TM, EIds, EAds, SQ S3

Sequence Purpose: 8, 7 →, 4, 3, 1, 7, 7, 1 →, 7, 1, 4, 6 →, 2, 7, 6, 1, 6, 1, 4, 11, 6, 1, 2, 1, 9

Elicitations Purpose: 5, 14, 1,6,5,14, 1,9, 1,3,11,14, 15, 16, ① 8 14, ⑤, 14, ① 8 15, ① 11,14, ① 14, ① 8, ① 11,14, 15, 1 8, ① 8, ① 11, ① 8, 8, ① 11, ⑤ 8, ① 8 11 14, 1 8, 8

Verbal Participants: T, T S →, T S →, T S →, T S, T S →, T, T S →, T S, T S, T

Primary Verbal Roles: Direct Tell Ask, Ask, Tell Ask, Ask →, Ask →, Tell Ask →, Direct Ask, Ask →, Tell Direct Ask →, Ask, Tell Ask, Direct

Primary Verbal Roles (second line): –, Tell →, Tell →, Tell →, Tell, Tell →, –, Tell →, Tell →, Ask –

Teacher 07 Date 4-11-83
Lesson 4 Topic: Guide Words (Dictionary)

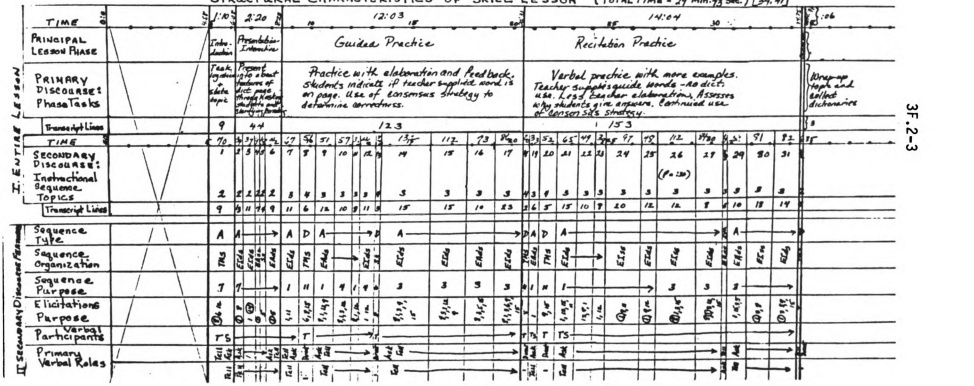
TIME ROUND ++ = 1 minute (1/4 inch)

T = Teacher S = Student

I = Initiation Ev = Evaluation
R = Reply EL = Elaboration
R? = Optional

The Reading Period: Follows directions giving for worksheet on categorization
Position of the Skill Lesson:

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = 29 min. 4½ sec.) [34:41]



3F.2-3

Teacher 21 Date 3-1-83 Lesson 4 Topic: Outlining and noting details

TIME RECORD •= 1 minute (3/8 inch)

T = Teacher, S = Student, I = Initiation, R = Reply, Ø = optional, Ev = Evaluation, El = Elaboration

The Reading Period: Position of the Skill Lesson: Beginning of Reading Period; lesson followed by 10 minutes of independent seatwork completing worksheet practiced as a group; students then given a second worksheet for ind. work.

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = 26 min 55 sec.)

I. ENTIRE LESSON

TIME	0:0 – 52"	15:20	2:28	8:45	26:25 – 26:55	30
PRINCIPAL LESSON PHASE	Intro	Recitation Practice	Presentation	Guided Practice	Closure	Independent work →
PRIMARY DISCOURSE: Phase Tasks	States topic and book ref.	Teacher elicits information about topics and details from article in book to place in outline form on board. Provides some elaboration on correctness of recall focused on correctness	State task directions and read worksheet directions	Group verbally completes first 2 items on worksheet to understand how to do task.	Sets time limit for ind. practice	
Transcript Lines	3	156	19	92	6	

Secondary Discourse Features

SECONDARY DISCOURSE: Instructional Sequence	1	2–3	4	5	6	7	8	9	10	11	12		13	14	15	16	17	18	19	20–25	26	27
TIME	52	[illegible]	107	34	41	44	46	47	167	48	241		97	3	[illegible]	80	68	54	126	[illegible]	197	30
Topics	4	→									→		6	3	4	4 →		3 →		4 →	3	5
Transcript Lines	3	5	24	8	10	5	3	8	25	7	30		17	5	5	8	11	11	34	6, 3, 3, 1/2, 2	26	6
Sequence Type	D	→										A	→		D	D →		D	A	A, D, D, A, D, D	A	D
Sequence Organization	TM	[illegible]	EIds	EAds	EAds	S3	S3	EIds	EIds	EAds	EIds	A	TM	EASS	S3	THS	TM	EIds	EIds	EASS, TM, S3, S3, S3	EIds	THS
Sequence Purpose		6 →										A	8	[illegible]		11 →		12	1	1, 10, 9, 4	4	12
Elicitations Purpose	8		①,6,8, 11,15	①,6,8	①,15	11	1	①	①	1,11,15	①,11,15	A			H	⑧,11,15		8,9,11,15	①,8, 6,11,15	1,8 / 1 / 8	8,9,11,15	8,9,11
Verbal Participants	T	→										A	T	T/S	→	T/S	T	T/S	→	T		T
Primary Verbal Roles	Direct / Tell	→											Tell	Tell	Tell	Direct / Tell	Direct / Tell	Ask	→	Direct / Tell / Tell / Tell	Ask	Direct
	→													Ask	Ask	Ask / Tell		Tell	→	Ask / Ask	Tell	1

Date 2-3-83
Lesson 4 Topic: Reading for Details

TIME RECORD: 00 = minutes (seconds) | T = Teacher, S = Student | I = Initiation, R = Reply, E = Elaborated | Ev = Evaluation, El = Elaboration

Follows spelling lesson.
Lesson continues almost to end of period; students begin work book assignment as seatwork.

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = 42 min. 28 sec.)

Time	1:39	10:03	1:57	1:33	9:51	3:41	3:12	9:59	
Phase	Introduction	Interactive Presentation	Procedures	Interactive Presentation	Guided Practice	Recitation Practice	Review	Recitation Practice	Closure
Activity	Book, topic; gives example, introduction to lesson	Questioning students about how they find out answers when they read; indirect statement of topic at 4:39; presents lesson task	Explains (models) how she looks for details to answer Q's	Elicit how to read for details; expects to be asked	Verbal practice, w/ elaboration locating information; follows sequences (pauses noted) of independent work - guided in time	Recite answers to practice questions	Assess students' understanding of how to read for details	Read questions, complete worksheet; students independently complete worksheet. Verbally make correct answers; students certify "Thumbs up"	
Lines	19	110	21	19	57	47	45	41	12
Lines	17 / 10	12, 12, 24, 24, 50, 12	21	10	9, 51, 7, 23	6, 8, 16, 7	31	14, 7, 7, 9	7

Teacher 20 Date 3-18-83 Lesson 4 Topic: Synonyms & Antonyms

TIME RECORD •= 1 minute (3/8 inch) | T = Teacher S = Student | I = Initiation R = Reply Ø = optional | Ev = Evaluation El = Elaboration

The Reading Period: Position of the Skill Lesson: Class in progress; group called to reading group area

STRUCTURAL CHARACTERISTICS OF SKILL LESSON (TOTAL TIME = 21 min. 24 sec.)

		I		IIB	IV	IV	V	
I. ENTIRE LESSON	TIME	0:0	[illegible]	[illegible] 5	[illegible] 10 15	16:17 20	[illegible]	21:24 25 30
	PRINCIPAL LESSON PHASE	Introduction		Interactive Presentation	Recitation Practice	Recitation Practice	Closure	
	PRIMARY DISCOURSE: Phase Tasks	Settle group: manage	Focus on work-sheet folders [illegible]	Define topic of lesson: synonyms, antonyms	Fill in worksheet answers correctly; Orally supply answers to worksheet task	Use context and glossary to place correct synonym/antonym in worksheet sentences	Directions for seatwork [illegible]	
	Transcript Lines	17	7	32	195	58	21	
	TIME	[illegible] 59	12	[illegible] 56 57	[illegible] 24 26 7 36 25 17 51 26 18 38 6 30 26 45 41 38 44/5 40 7 6	35 48 30 39 [illegible] 45 [illegible] 59	[illegible] 24	25 30
	SECONDARY DISCOURSE: Instructional Sequence Topics	4 3 4	4	4 5 2 2 2	4 4 4 3 →	4 3 → 4 3 →	3 →	
	Transcript Lines	2 3 12	7	3 5 6 12 6	10 6 9 10 9 6 9 14 11 8 4 6 12 14 10 12 19 14 5 5	5 12 6 5 6 3 10 6 5	7 6 8	
II. Secondary Discourse Features	Sequence Type	D E E	E	D D A →	D → A →	D A → D A A D	D →	
	Sequence Organization	TH SS THS	THS	SS ESd ESd ESd →	EAs SS EAs EAs ESs SS EAs ESs → SS EAs →	[illegible]	THS	
	Sequence Purpose	10 12 12	10	12 12 7 →	12 11 1 → 3 1 3 1	3 1 → 12 1 1 10	11	
	Elicitations Purpose	[illegible]	⑨ 15	[illegible]	[illegible]	[illegible]		
	Verbal Participants	T T S →		→	T S →	T S →	→	
	Primary Verbal Roles	[illegible]	Ask [illegible]	Ask →	Ask →	[illegible] →	[illegible]	
		[illegible]	[illegible]	[illegible] →	[illegible] →	[illegible] →	[illegible]	

APPENDIX 3G

SAMPLE DATA REPORTING WORKSHEETS AND FORMS

The following forms were used for various step in the data analysis as described in Chapter III:

3G.1 -- Tally Sheet for Sequences and Elicitations
3G.2 -- Tally Sheet for Evaluations
3G.3 -- Worksheet: Summaries of Phase/Lesson Information
3G.4 -- Worksheet: Cognitive Knowledge and Instructional Purpose Codes
3G.5 -- Phase Summary: Cognitive Knowledge Types
3G.6 -- Phase Summary: Instructional Purpose Codes
3G.7 -- Summary of Elicitation Type Frequencies
3G.8 -- Record of Sequence Time Measures for Lessons/Phases

APPENDIX 3G

SAMPLE DATA REPORTING WORKSHEETS AND FORMS

3G.1 -- Tally Sheet for Sequences and Elicitations

Teacher_____
Topic_____
Skill Cat._____

	Intro	Present A - Monologue	Present B - Interactive	Guided Practice	Recitation	Closure	Review	TOTAL
TOTAL SEQUENCES								
TM								
TMS								
S 3								
EAss								
EAds								
EIss								
EIds								
TOTAL ELICITATIONS								
#1 Product								
3 Process								
5. Usefulness								
6. Info Manage.								
8. Task Procedures								
9. Behavior Man.								
10W - Experience: Gen								
10S - Experience: Sk.								
11. Clarification								
12. Verification								
14. Check understdg.								
15. Direct Attention								
LENGTH (Time in min.)								
SEQUENCE CONTENT								
1. Background								
2. Skill Content								
3. Use with Example								
4. Task directions								
5. Student Behavior								
6. Repetition content								

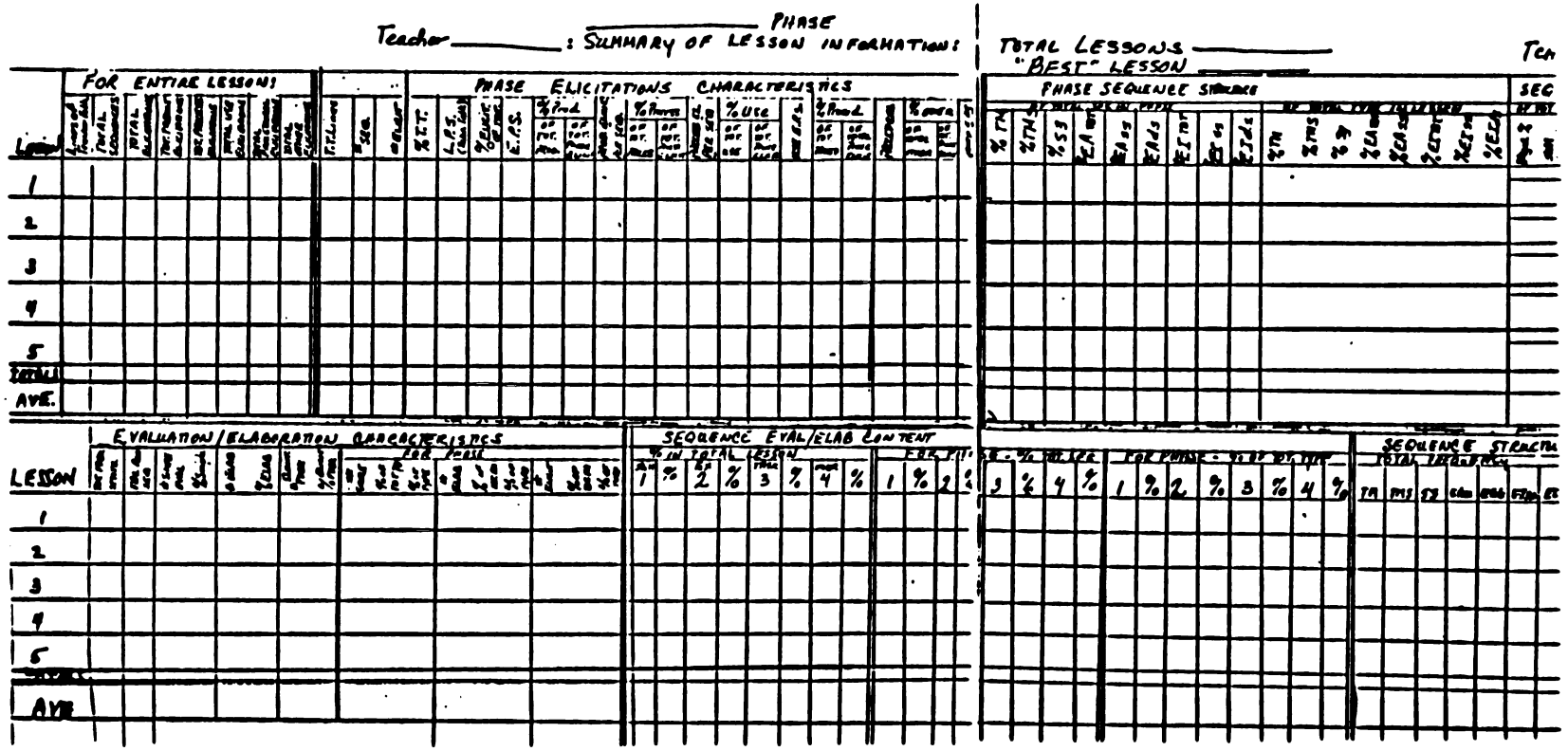
3G.2 -- Tally Sheet for Evaluations

Teacher _____
Topic _____
skillCat _____

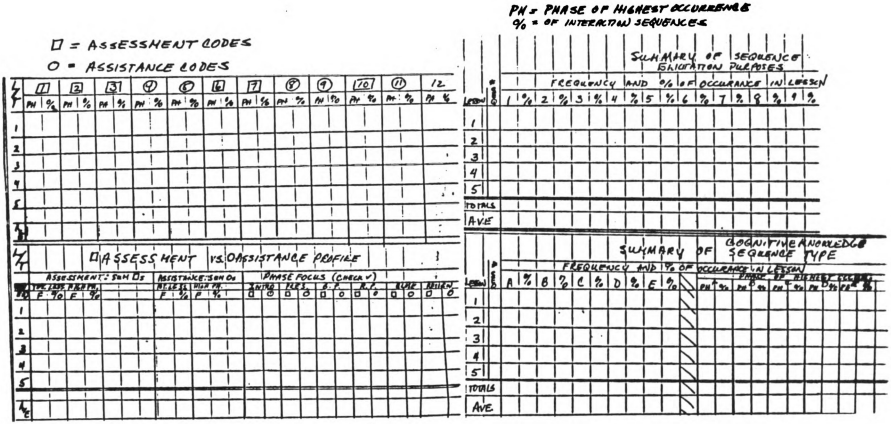
Evaluation/Elaboration

	Intro	Pres A	Pres B	G.P.	R.P.	C.I.	Rev.	TOTAL
Pos. Eval								
Neg. Eval.								
Pos Elab								
Neg Elab								
Elicits Eval								
Probe info								
Probe repeat								
No feedback								
Neutral								
TOTALS								
Pos+Neg eval								
Pos+Neg elab								
Tot elicit fdbk								

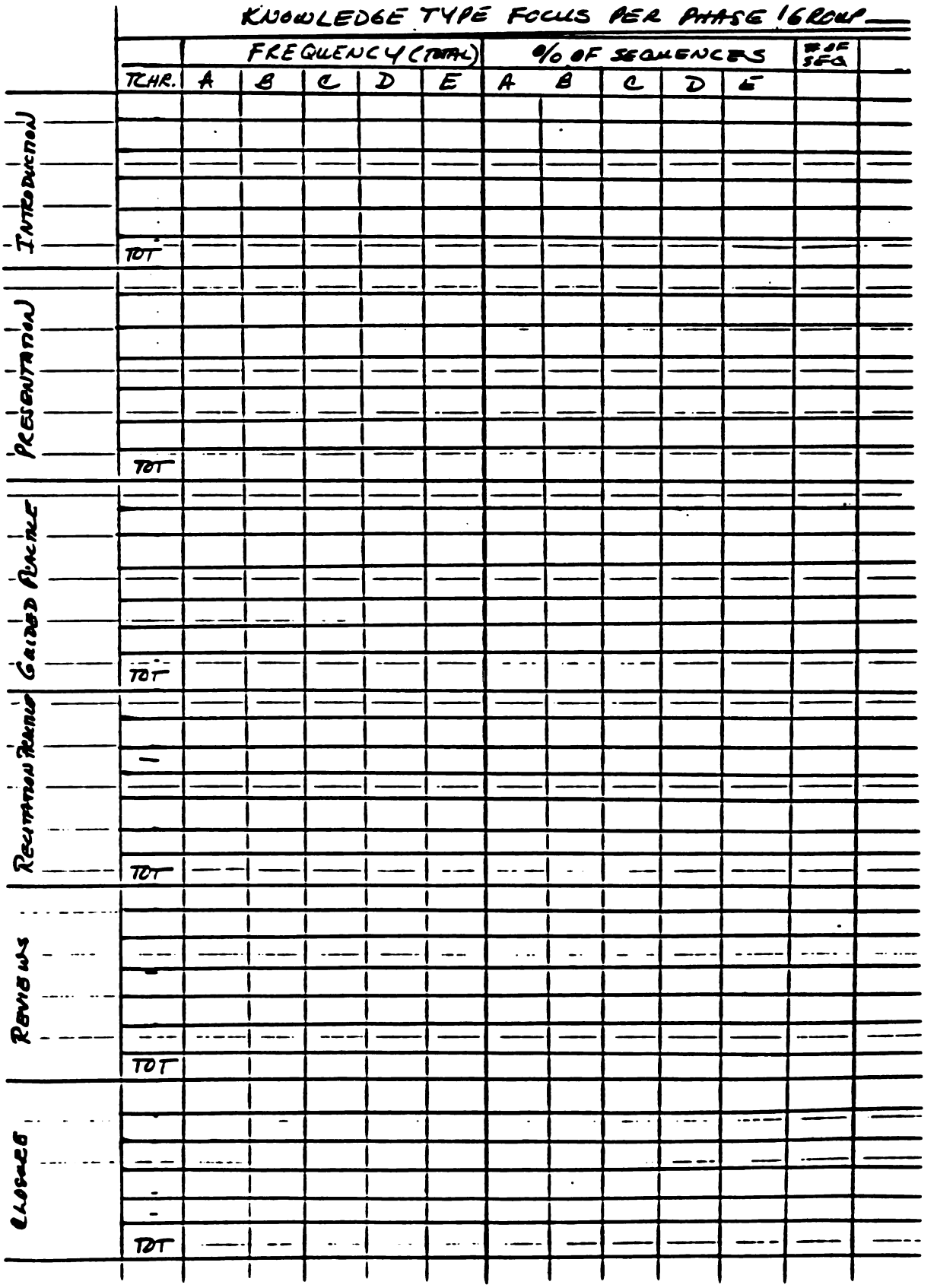
3G.3 -- Worksheet: Summaries of Phase/Lesson Information



3G.4 -- Worksheet: Cognitive Knowledge and Instructional Purpose Codes



3G.5 -- Phase Summary: Cognitive Knowledge Types



3G.6 -- Phase Summary: Instructional Purpose Categories

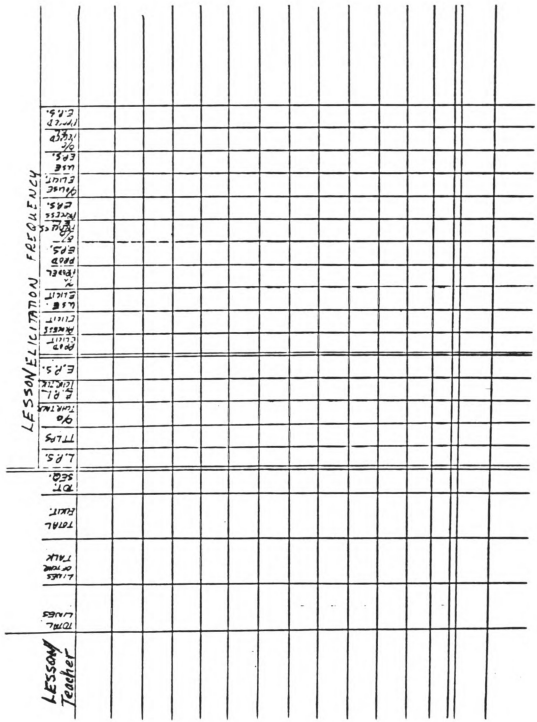
FREQUENCY OF INST. PURPOSES FOR SEQ. WITH ELICITATIONS

______ TEACHER GROUP (N = ____)

3G-8

TCHR	LESS #	INTRO				PRES.				Guided				Recitation				Reviews				Closure				TOTAL			
		ASS	AST	OTH	NQE	ASS	AST	OTH	NQE	ASS	AST	OTH	NQE	ASS	AST	OTH	NQE	ASS	AST	OTH	NQE	ASS	AST	OTH	NQE	ASS	AST	OTH	NQE
TCHR		TOTALS PER TCHR																											
TOTAL GROUP	TOT.																												
	$\bar{x}$																												
	SD																												

3G.7 -- Summary of Elicitation Type Frequencies



3G.8 -- Record of Sequence Time Measures for Lessons/Phases