KASIAS, LOU ANN WILSON

A COMPARISON OF THE UTILIZATION OF LANGUAGE ARTS INSTRUCTIONAL TIME FOR TEACHERS WITH AIDES AND TEACHERS WITHOUT AIDES

The University of North Carolina at Greensboro ED.D. 1981

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A COMPARISON OF THE UTILIZATION OF LANGUAGE ARTS INSTRUCTIONAL TIME FOR TEACHERS WITH AIDES AND TEACHERS WITHOUT AIDES

by

Lou Ann Wilson Kasias

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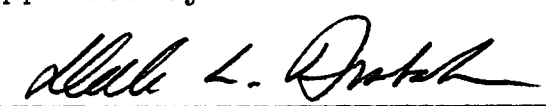

Dissertation Adviser

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of the Graduate School at the University of North Carolina at Greensboro.

Dissertation Adviser Hale L. Ingram

Committee Members Elisabeth A. Brooks

Ann J. Pace

Herman Middleton

May 22, 1981
Date of Acceptance by Committee

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Date of Final Oral Examination

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This study examined the effect aides have on teacher utilization of language arts instructional time.

Eighty observations were made in 40 first-, second-, and third-grade classrooms in North Carolina's central Piedmont section. Teachers in half of these self-contained classrooms had the services of an aide and those in the other half did not. Each class was observed during 90-minute periods for two consecutive days. Both teacher and aide behaviors were coded 60 times each according to specified categories on an observation instrument.

Analyses were made using a two-sample t test with a .05 level of significance. Teachers were compared as to how much time they spent engaged in noninstructional, monitorial, and instructional duties; in different aspects of the language arts and reading; in teaching, assessing, assigning, and helping with assignments; and in interacting with students individually, in small groups, and in large groups. Finally, comparisons were made as to how much adult human resource time was directed at students individually, in small groups, and in large groups.

After comparing teachers with and without aides, the findings supported the following:

1. No significant difference was found in the proportion of time spent on noninstructional duties.

2. Teachers with aides spent significantly less time on monitorial duties.

3. Teachers with aides spent significantly more time on instructional duties.

4. No significant differences were found in the proportions of time spent on reading, oracy, writing, spelling, and handwriting.

5. No significant differences were found in the proportions of time spent on word identification, word meaning, oral reading, silent reading, text comprehension, and study skills.

6. No significant differences were found in the proportions of time spent teaching ($p = .0524$), assessing, and assigning.

7. Teachers with aides spent significantly less time helping students with difficult assignments.

8. No significant differences were found in the proportions of time spent directly involved with students individually, in small groups, and in large groups.

9. More human resource time was provided individual students and small groups of students in classrooms with teacher-aide teams.

In conclusion, this study found that aides had a positive (though not always statistically significant) effect upon the classrooms and teachers they served.

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Lastly, I express my love and appreciation to my family. My father, Lumis O. Wilson, taught me that defeat only occurs when one does not see it as a challenge. My mother, Annie C. Wilson, taught me how to persevere when defeat and challenge become indiscernible. During the past few years she has often assumed my domestic responsibilities so that I could pursue my research and study. My husband, Sam, gave me freedom, trust, and love so that I could become rather than be. My daughter, Leigh, sacrificed the comforts of experiencing maternal consistency. During my study she has grown intellectually and emotionally so that she, too, has learned to understand and appreciate her mother's need to continue those same growth processes.

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CHAPTER I

INTRODUCTION

Literacy for most people has its foundation in the primary grades. Under the tutelage of first grade teachers children learn that what they say can be written and what is written can be read. The basic skills of reading and writing are expanded and practiced throughout and beyond the primary grades. For some, the step into the literate world is natural and enjoyable. For others, the step is ridden with failure and can be devastating. For the teachers, the responsibility is awesome.

Public and school officials are increasingly holding teachers accountable for the degree of learning their students achieve. They cite the millions of dollars spent in providing facilities, hardware, materials, supplies, and additional school personnel to help teachers teach and students learn. Opinions abound concerning what teachers should do in order to provide quality education. Yet, teachers have received very little consistent guidance from educational researchers in identifying specific teaching behaviors which may result in improving student achievement. For years, the research literature (Barr, Bechdolt, Gage, Orleans, Pace, Remmers, & Ryans, 1953; Dunkin & Biddle, 1974; Saadeh, 1970; Smith, 1971; Travers, 1973), could

not consistently identify the characteristics of effective teaching.

However, within the past seven years a knowledge base concerning linkages between teacher behavior and student achievement has emerged. Major process-product studies (Brophy & Evertson, 1974; Fisher, Berliner, Filby, Marliave, Cahen, Dishaw, & Moore, 1978a; McDonald & Elias, 1976; Soar, 1973; Stallings, 1973; Stallings & Kaskowitz, 1974) have identified student opportunity to learn, student academically engaged time, and direct instruction as being positively and significantly related to achievement gains. More specifically, student test scores have indicated more gains when test content has been covered. Furthermore, the time students have spent actively engaged in learning content has been increased by teachers who provided substantive interaction, active monitoring of academic performance, immediate feedback, and extensive coverage of material. Although instruction involving one or two students has been generally believed ideal for optimal learning, it has not been advantageous for increasing total class achievement since individualized instruction of this nature usually limits the teacher's ability to keep remaining class members on task. In fact, large group instruction has been found to be consistently related to achievement since it possibly maximizes the teacher's control of student attentiveness. Yet, in the case of reading instruction

for first and second graders, small group instruction has been effective (Rosenshine, 1979). Finally, throughout this research there has been recognition that context influences the degree and sometimes the direction each teaching practice has upon learning.

Those schools and programs which have sought to increase student achievement by lowering teacher-student ratios or by providing teachers with classroom aides have increased the potentiality of more teacher-student interaction, academic monitoring, and substantive feedback. Whether teachers are indeed taking advantage of this potential is questionable. The present study used the findings from process-product research as major guidelines for identifying and comparing teacher behaviors in classrooms with aides and classrooms without aides.

Statement of the Problem

By the beginning of the 1980-1981 school year, most of North Carolina's primary classrooms were participating in the state's Primary Reading Program (PRP). The gradual implementation of the program began in 1975. This program uses teacher aides, volunteers, comprehensive planning, increased supplies and materials, and increased diagnostic information to improve classroom reading programs in grades one through three (N. C. Department of Public Instruction, Division of Reading, 1979). Many classrooms which were not

directly involved in the program were still benefited because of it. They received help from volunteers, used some of the same diagnostic tests, and shared some of the materials. Consequently, the basic difference between a Primary Reading (PR) classroom and a non-PR classroom has been that a PR classroom had an aide and a non-PR classroom did not.

Therefore, the major purpose of comparing the utilization of time of teachers in PR classrooms and of teachers in non-PR classrooms was, in actuality, the purpose of comparing the utilization of time of teachers with aides and teachers without aides. This study sought to learn if the PR teachers are taking advantage of the program's components, especially the teacher aide component. If they are, PR teachers should be spending less time on noninstructional duties and more time on instructional duties giving particular attention to teaching. Moreover, this study should reveal whether the content of what is taught is significantly different in classrooms with aides and classrooms without aides. Aides could possibly enable teachers to broaden content coverage and to provide more integrated language arts programs. Finally, if aides are performing instructional and monitorial duties, PR teachers should have more opportunities to work with small groups and individuals and be less concerned that they are

drastically limiting the direct attention their remaining students need in order to stay involved with learning tasks.

Need for the Study

The number of employed teacher aides in North Carolina has been on a steady increase since 1965. During the 1979-1980 school year, North Carolina employed 17,312 teacher aides (N. C. Department of Public Education, Division of Statistical Services, 1980, pp. 1-48). Of this number, 5,401 aides served as part of the state's Primary Reading Program. This program began in 1975 and since that time until the end of the 1979-1980 school year had cost the state a total of $88,026,847. An additional $54,553,462 has been appropriated for the 1980-1981 school year (Hill, Note 1).

Despite the magnitude of the Primary Reading Program, very little is known concerning how it has changed teaching behavior and has affected the language arts curriculum. The only major comparison of the reading programs in PR classrooms and non-PR classrooms has been through comparisons of reading test scores. In general, students in PR classrooms have scored one month higher on reading tests than have students in classrooms not in the program. The most positive impact on reading performances has been on minority and low-income students enrolled in the PR Program. They

scored on the average from one to three months higher than comparable groups not in the PR classrooms (N. C. Department of Public Instruction, Division of Research, 1979a).

Which of the PR Program's components have contributed to this slight improvement in reading scores has not been assessed. Yet, despite this improvement and because of the high cost of the program, a controversy has been growing over whether aides, the most expensive component of the program, are effectively contributing to the educational quality of the public schools. While some educators feel that aides are indispensable, others feel that too many aides lack competence and interfere with teachers' instructional and planning time. Still others believe that teachers have not taken full advantage of the presence of aides in terms of devoting more of their professional time toward increasing the quality and quantity of instruction.

More information is needed concerning the effectiveness of the program. Not only should this information be concerned with describing pupil achievement, but it should also provide direction toward improving the program's components and the teachers' ability to use these components effectively.

Through observational data teachers and aides can analyze their roles and make necessary adjustments toward improvement. To assume that teachers are making adaptations because of the increases in inservice training, supplies

and materials, personnel, and diagnostic information is unwise. Through classroom observations Miller (1970) found no evidence to support the belief that aides increased teachers' instructional time. His study revealed that teachers with aides spent more time performing clerical chores than did teachers without aides. Though these findings run counter to other findings in Minneapolis (Bennett & Falk, 1970, pp. 179-180) and Portland, Oregon (Croft Administrator's Service, 1972), they do give impetus to the need for learning whether or not a similar situation exists in North Carolina.

Rationale for the Study

Since teacher aides are expected to perform many nonteaching tasks once performed by teachers, their utilization should increase the teachers' actual instructional contact time with pupils and decrease the amount of time teachers spend performing noninstructional and monitorial duties. On the other hand, if the utilization of aides has no effect on or decreases the proportion of teachers' actual instructional contact time with students and, in fact, increases the proportion of time teachers spend performing noninstructional and monitorial duties, the presence of aides will not have contributed to better instruction. Under these circumstances, teachers and aides need to reassess their roles.

Identification of the Content Areas under Analysis

An increase in the amount of instructional time does not necessarily mean an increase in substantive interaction in the language arts and particularly in reading. In order to determine whether substantive instruction is occurring, an observer must first identify the subject matter being taught. Reading instruction presents a problem. Reading is interrelated with all other communicative skills. Thus, reading instruction, especially in the primary grades, is more or less integrated into a total language arts program. Because of this the present investigation did not limit observations to the confines of a reading circle. Instead, teachers' efforts toward developing facets of listening, speaking, and writing were noted in addition to reading instruction.

This study attempted to identify the language skills receiving specific attention during lessons in which teachers and pupils interacted. Reading instruction was specifically analyzed as the observer subcategorized teaching behaviors which provided interaction regarding word identification, word meaning, text comprehension, study skills, silent reading, and oral reading. Those teaching behaviors in the language arts which were not specifically intended to affect reading performances directly were classified as intending to develop oracy, writing, spelling, or handwriting. Through this process the

proportion of teaching time allocated to the various aspects of the language arts were identified. Comparisons were made as to how much time teachers were involved in each area and as to whether such allocations were significantly different between PR and non-PR classrooms.

Identification of Teaching, Assessing, and Assigning

Basic to the above findings is identification of teaching behavior during an instructional period. While most teachers would agree that much of their behavior during school hours should not be labeled as teaching, identification of that behavior which is teaching, much less good teaching, is extremely difficult. Before teaching can be identified it must be defined. Yet, with the limitations inherent to language and to each individual's unique perception of events, as many definitions of teaching exist as there are teachers, students, and observers of teaching.

For the purpose of this investigation teaching was recognized as those behaviors exhibited and expressed by a teacher while interacting with students with the intention of aiding in a meaningful and rational manner the transmission to or arousal of skills, knowledge, and values.

All teaching, whether it is drilling, training, or instructing, involves interaction among a teacher, student, and the subject matter. Teaching cannot occur unless there

is something to be taught. A student cannot teach himself or herself something he or she does not know. The teacher must be an outside force in bodily form or be represented through books, films, or other devices. While worksheets and workbook pages cannot represent the teaching element, their use is teaching only if they are appropriate and responsive to the needs of the students using them. Thus, for teaching to be maintained, continuous communication must be kept opened between the teacher and students concerning the subject matter being studied (Hyman, 1970). Because of this observers are most likely to recognize teaching when it occurs through face-to-face interaction between teacher and student.

Preactive activities, such as assigning, testing, arranging furniture, and mimeographing worksheets, and postactive activities, such as grading and diagnosing, are necessary for successful teacher interaction with students. Nevertheless, only when these activities occurred while the teacher was engaged with the student in explaining, questioning, guiding, and structuring subject matter did this study classify them as teaching behaviors. When these preactive and postactive activities occurred without direct interaction between teacher and student they were classified as noninstructional behaviors. When testing, assigning and checking involved interaction between teacher and student but did not involve further explanation or discussion

of the subject matter at hand, they are quasi-teaching behaviors and thus, were included in the instructional category but were noted separately from teaching.

In all methods of teaching including discussion, Socratic dialogue, discovery, recitation, lecture, role-playing, games, and sociodrama, questioning is an important technique used to develop understandings, skills, and values. Moreover, questioning is teaching when it provides review of subject matter before new information is introduced or assignments are given. Questioning is teaching when it is used to guide student discussions or performances. However, questioning is assessing when it is used by a teacher to find what a student know. When questioning serves as a teaching technique at the same time it is used for assessing, it can be rightfully labeled as teaching. It loses its teaching characteristic if the interaction does not immediately broaden or enhance the meaning of the subject matter being taught. Thus, administering a test is assessing, not teaching. When a teacher and students interact by checking student work, provision of answers without further explanation as to why they are right or wrong is assessing, not teaching. Consequently, in this study when interrogation and checking were not used for immediate expansion or for feedback they were labeled as assessing. Otherwise, they are labeled as teaching.

Giving assignments is similar to questioning in that the process is inherent to most teaching methods. Teachers often assign tasks and remain with the students to provide guidance as the students perform. The teaching-assigning-performing cycle in such cases becomes so interwoven that an observer may have difficulty identifying assigning from the other processes. When this occurs, assigning is teaching. However, when commands are made such as "Turn to page 56. On notebook paper copy the first seven sentences found on this page. Capitalize all proper nouns and insert commas and periods where they belong," they represent assigning. In this study, comments such as these were categorized as <u>assigning</u> when they occurred during the time interval being coded. However, if the teacher preceded or followed the assigning comments with a review session on capitalization and punctuation rules, the time interval containing the review was coded as teaching time. Whenever both assigning and teaching statements were made in conjunction, the statements were labeled as <u>teaching</u>.

Quasi-teaching behaviors were recently highlighted by Durkin (1978-1979) in her study of reading comprehension instruction. She found that mentioning, assignment giving, and checking consumed a lot of the teachers' instructional time. Durkin observed that too frequently assigning was not preceded with instruction and assignment

procedures were not clearly explained. Moreover, during one substudy, Durkin and her associates spent 4,469 minutes observing reading programs and found that teachers spent 17.65% of this time assessing comprehension. According to her explanation of coding procedures Durkin did not label questioning which had the potential for being instructive as assessing. The observer used this category when teachers' concerns were limited to whether the students' answers were right or wrong. By eliminating assigning and assessing from instruction Durkin classified only 1.63% of the total observed time spent during reading periods as being spent with the teacher instructing. (As explained earlier the present study's procedures for contrasting teaching from assessing and assigning were not as restricted as Durkin's procedures.)

Since recent findings emphasize that substantive interaction between student and teacher positively relates to student achievement, this investigator believes that discriminating between teaching, assigning, and assessing as described above allowed for determining whether or not more substantive interaction was indeed occurring in PR classrooms as compared to non-PR classrooms. This investigator contends that an improved instructional program has a teacher spending more instructional time teaching and not necessarily more time assessing and assigning as Durkin found. Therefore, if with an increase

in instructional time there is an increase in assessing and/or an increase in assigning, both of which are accompanied with minimal statements of clarification, instruction is not improved.

Identification of Helping with Assignments

Brophy and Evertson (1974) and Fisher et al. (1978a) found that not all substantive student-teacher interaction was positively related to achievement. The amount of further explanation following an assignment was negatively associated with student learning. Evidently, if a student is assigned a task which is beyond his understanding or ability, he will need to seek more help. Although an observer might note that more individualized attention is being given, a notation of this event does not necessarily indicate that more learning is occurring. It may mean that the teacher misdiagnosed the student's needs, preceded the assignment with an inadequate lesson on the assignment's content, gave inadequate directions in accomplishing the assignment, or had not encouraged self-confidence within the student concerning his or her ability to succeed without outside reinforcement. Certainly good teaching includes providing further explanation to individuals needing help. Yet, this investigator believes that weaknesses in an instructional program might be uncovered by identifying the frequency of these times that

teachers help students who have had trouble completing an assignment and have sought help. With this rationale in mind, a fourth instructional activity, helping with assignments, was included on the observational instrument. This category was marked when students were provided further explanations concerning an assignment after they specifically initiated the request for help. Thus, if immediately after an assignment was given a teacher asked, "Are there any questions?" and proceeds to answer those questions, his or her behavior was not categorized under helping with assignments. Also, if while monitoring the class the teacher offered assistance to a student, the act of giving that assistance was categorized as teaching when it concerned the assignment's content or as assigning when it concerned the directions for completing the assignment. Only when the student had attempted to do the assignment and then sought help by interrupting the teacher's performance of another task was the teacher's response labeled as helping with assignments. If PR teachers spend significantly more time helping with assignments than do non-PR teachers, one can assume that the PR Program is not contributing to an improvement in appropriately prescribed instruction or to an improvement in teaching and assignment giving.

Identification of Individual, Small-group, and Large-group Instruction

Finally, studies have found that generally in those primary classrooms where teachers have been able to provide more individualized and small-group attention while keeping remaining class members on task, achievement has been positively affected (Fisher et al., 1978a; McDonald, 1976; Stallings, 1973; Stallings & Kaskowitz, 1974). This has been true especially for those students in need of fundamental reading instruction. Nevertheless, Medley (1979) reviewed these and similar studies and concluded that large-group instruction was most effective because the teacher could use it to maintain the attention of more students. Although this investigator recognizes the relevance of both conclusions, the contention is that with the assistance of aides teachers can make organizational changes which will increase opportunities for small-group settings without increasing the possibilities for disruption. Therefore, when this study identified the proportion of time teachers and aides were involved directly with individual students, with students in small groups (less than half of the class), and with students in large groups (half of the class or more), PR teachers were expected to provide more attention to individuals and small groups than did non-PR teachers. Moreover, when the efforts of PR teachers and their aides were combined, an overall increase in attention to

individuals and small groups was expected to be evidenced. A finding of no significant increase would have meant that PR teachers and aides may need to reanalyze how they organize for instruction and determine whether changes are needed in order to increase student engagement time.

Identification of Aide Behavior

The major purpose of this study was directed toward identifying, classifying, and comparing PR teacher behaviors and non-PR teacher behaviors. The data were used to provide suggestions as to how the PR teachers may potentially increase his or her productivity as it relates to student achievement. Since aides are to contribute to this productivity, their behaviors were also observed and classified. The categories used for classifying activities of aides are not as specific as those used for classifying activities of teachers. Their behaviors were labeled under noninstructional duties, monitorial duties, or instructional duties and their interaction with students is classified as being with large groups, small groups, or individuals. The subject categories were condensed to only three areas: reading, other language arts, and non-language arts. This information was used to assess the value of the presence of aides and to help in providing informed suggestions as to how their utility may be changed in order to increase their potential for affecting improvement in the instructional program of Primary Reading classrooms.

Definition of Terms

From the preceding rationale evolved the following definition of terms used in this study:

Aide instructional duties: directing language arts activities. This observation category represents processes which involve aide-student interaction intended to enable students to improve communicative skills other than reading. Activities include teaching a lesson, reviewing skills, administering tests, and helping with assignments.

Aide instructional duties: directing reading activities. This observation category represents processes which aide-student interaction intended to enable students to improve reading skills. Activities include directing a reading lesson, reviewing reading skills, monitoring oral and silent reading, administering reading tests, helping with assignments, and providing various kinds of reading related drills.

Assessing. Assessing is the process of inquiring into what the student knows and is capable of doing. Assessing includes administering a test, verbally questioning students, and checking student responses. (Whenever any of these activities are immediately used for or accompanied by further explanation or clarification, they are teaching activities not assessing activities.)

Assigning. Assigning is the process of the teacher giving students a learning task to be completed away from

the direct guidance of the teacher. (Whenever assigning is accompanied by statements which clarify or explain the subject matter, the process is teaching not assigning.)

Handwriting instruction. Handwriting instruction is a language arts category which involves teacher-student interaction intended to facilitate and improve students' penmanship.

Helping with assignment. Helping with assignment is the process of the teacher providing assistance to a student with a learning task of which the student has had difficulty completing and has sought help. Teacher behavior is given this classification if the student initiates the interaction by requesting help because he or she has discovered that certain questions and needs must be answered in order to complete the assignment. (If the teacher initiates the assistance, the behavior is classified as teaching.)

Instructional duties. Instructional duties involve teaching, assessing, assigning, and helping with assignments.

Large group. A large group consists of half of the class or more.

Monitorial duties. Monitorial duties involve the process of supervising students as they work, play, and move about the room or school. They include supervising behavior during transitional periods, correcting behavior, and giving overall instructions for the day's procedures.

Non-language-arts instruction. Non-language-arts instruction involves instructional behaviors intended to

enable students to acquire skills, knowledge, and values in curriculum areas such as mathematics, science, health, and social studies.

Noninstructional duties. Noninstructional duties involve the processes of performing technical (e.g., operating and maintaining audiovisual equipment and duplicating equipment), clerical (e.g., checking papers, taking attendance, completing forms, and distributing materials), housekeeping (e.g., straightening furniture, cleaning, and putting up displays), or health-related tasks (e.g., applying first aid and serving refreshments).

Oracy instruction. Oracy instruction is a language arts category which involves student-teacher interaction intended to facilitate student listening and speaking abilities. Oracy activities include speaking opportunities (e.g., show-and-tell, creative dramatics, sensory awareness, telling stories, conversing, and discussions) and listening opportunities (e.g., storytime, film viewing and listening, and activities in sound identification). (If the teacher is not directly involved with the students during the oracy process and tends to be monitoring conduct, the teacher's behavior is monitorial and not instructional.)

Oral reading instruction. Oral reading instruction is a subcategory of reading instruction which involves teacher-student interaction as the teacher listens and prompts as students read orally.

Other language arts instruction. Other language arts instruction is a category under aide: instructional duties which involves aide-student interaction intended to develop student understandings and skills in oracy, writing, spelling, and handwriting.

Reading instruction. Reading instruction involves student-teacher interaction intended to enable students to decode and comprehend written language.

Silent reading instruction. Silent reading instruction is a subcategory of reading instruction which involves the teacher directly monitoring silent reading while providing prompts when necessary. It also includes the process of teachers reading recreational materials in order for their behavior to serve as a model during sustained silent reading periods.

Small group. A small group consists of less than half of the class.

Spelling instruction. Spelling instruction is a language arts category which involves student-teacher interaction intended to enable students to encode grapheme-phoneme relationships. Stress of word meaning during a "spelling lesson" must relate to the spelling of the word. If not, it is classified as word meaning instruction, a subcategory of reading. Phonics instruction is classified under reading if the instruction is intended to enable pupils to recognize the word. If the spelling pattern is

emphasized for encoding improvement, the lesson is classified as spelling instruction. Similarly, lessons on dictionary or glossary usage are classified as study skills instruction, a subcategory of reading.

Study skills instruction. Study skills instruction is a subcategory of reading instruction which involves student-teacher interaction intended to facilitate student ability in locating information through reading. Study skills activities include alphabetizing, skimming, scanning, using book guides, and using dictionaries.

Teaching. Teaching involves behaviors exhibited and expressed by a teacher while interacting dynamically with students with the intention of aiding in a meaningful and rational manner the transmission to or arousal of skills, knowledge, and values. When teaching the teacher says or does something to explain, clarify, structure, or guide student performances and understandings.

Text comprehension instruction. Text comprehension instruction is a subcategory of reading instruction which involves teacher-student interaction intended to enable students to gather meaning from units larger than a single word through lessons on recognizing key words, main ideas, and supporting details and making literal, inferential, evaluative, and applied interpretations.

Uncodeable activity. An uncodeable activity is one in which the teacher's or aide's behavior is not audible or

visible to the observer. If the opportunity arises observers may inquire of teachers and aides in order to verify what the observer believes has occurred (e.g., If aide leaves room for five minutes and returns with a stack of duplicated worksheets, the observer may inquire if aide was absent in order to make copies. If belief is confirmed, the observer may change label of behavior from uncodeable to noninstructional behavior). Moreover, this category is used to mark activities unrelated to student development (e.g., coffee break, call meetings for professional organizations).

Word identification instruction. Word identification instruction is a subcategory of reading instruction which involves student-teacher interaction intended to enable students to recognize words through lessons that include letter recognition, phonics, and sight words.

Word meaning instruction. Word meaning instruction is a subcategory of reading instruction which involves teacher-student interaction intended to enable students to understand word concepts and to identify word meaning through structural analysis, the use of context clues, and direct word study.

Writing instruction. Writing instruction is a language arts category which involves student-teacher interaction intended to enable students to express ideas through writing. Writing activities include writing mechanics

(e.g., usage, capitalization, and punctuation), the use of brainstorming, organizing, and structuring ideas before writing, the processes of proofreading, editing, and rewriting, and the use of patterns in developing sentence sense.

Statement of Hypotheses

The following statistical null hypotheses were formulated and tested to ascertain whether or not significant differences exist between how teachers with full-time classroom aides and teachers without full-time aides utilize the language arts instructional time:

1. No significant differences exist between teachers with and without aides in the utilization of time.

   a. No significant difference exists between the two in the proportion of time spent performing noninstructional duties.

   b. No significant difference exists between the two in the proportion of time spent performing monitorial duties.

   c. No significant difference exists between the two in the proportion of time spent performing instructional duties.

2. No significant differences exist between teachers with and without aides in the proportion of teacher instructional time spent on reading, oracy, writing, spelling, and handwriting.

a. No significant difference exists between the two in the proportion of instructional time spent on reading.

b. No significant difference exists between the two in the proportion of instructional time spent on oracy.

c. No significant difference exists between the two in the proportion of instructional time spent on writing.

d. No significant difference exists between the two in the proportion of instructional time spent on spelling.

e. No significant difference exists between the two in the proportion of instructional time spent on handwriting.

3. No significant differences exist between teachers with and without aides in the proportion of reading instructional time spent on word identification, word meaning, oral reading, silent reading, text comprehension, and study skills.

a. No significant difference exists between the two in the proportion of instructional time spent on word identification.

b. No significant difference exists between the two in the proportion of instructional time spent on word meaning.

c. No significant difference exists between the two in the proportion of instructional time spent on oral reading.

d. No significant difference exists between the two in the proportion of instructional time spent on silent reading.

e. No significant difference exists between the two in the proportion of instructional time spent on text comprehension.

f. No significant difference exists between the two in the proportion of instructional time spent on study skills.

4. No significant differences exist between teachers with and without aides in the proportion of language arts instructional time spent teaching, assessing, assigning, and helping with assignments.

a. No significant difference exists between the two in the proportion of time spent teaching.

b. No significant difference exists between the two in the proportion of time spent assessing.

c. No significant difference exists between the two in the proportion of time spent assigning.

d. No significant difference exists between the two in the proportion of time spent helping with assignments.

5. No significant differences exist between teachers with and without aides in the proportion of time spent in direct involvement with individual students, small groups of students, and large groups of students.

a. No significant difference exists between the two in the proportion of time spent in direct involvement with individual students.

b. No significant difference exists between the two in the proportion of time spent in direct involvement with small groups of students.

c. No significant difference exists between the two in the proportion of time spent in direct involvement with large groups of students.

6. No significant differences exist between classrooms which have teachers with aides and classrooms which have teachers without aides in the total amount of human resource time given to individual students, small groups of students, and large groups of students.

a. No significant difference exists between the two in the total amount of human resource time given to individual students.

b. No significant difference exists between the two in the total amount of human resource time given to small groups of students.

c. No significant difference exists between the two in the total amount of human resource time given to large groups of students.

CHAPTER II

REVIEW OF LITERATURE

The literature reviewed in this chapter concerns the effects of teachers, class size, aides, and an integrated language arts program upon the reading and language achievement of primary students.

Early Research of Teacher Effectiveness

For years research yielded very little evidence as to what teaching behaviors were most effective in producing academic growth. Morsh and Wilder (1954) reviewed research conducted from 1900-1952 and found no student achievement to be consistently and significantly affected by a specific teacher behavior or characteristic. Upon review of 32 comparative studies of teacher-centered classrooms and learner-centered classrooms, Anderson (1959) found eight studies supported the superiority of teacher-centered classrooms, eleven supported the superiority of learner-centered classrooms, and thirteen found no difference. Similar inconsistencies led many reviewers and investigators (Ackerman, 1954; Baldwin, 1965; Barr et al., 1954; Coleman, Campbell, Hobson, McPartland, Mood, Weinfield, & York, 1966; Heath & Nielson, 1974; Herbert, 1967; Mostellar & Moynihan, 1972; Popham, 1971; Ryans, 1960; Stephens, 1967)

to conclude that no existing evidence supported the use of any particular style or method as making significant differences in pupil academic growth.

The reasons most often given for the shortcomings of early research were best summarized by Dunkin and Biddle (1974) as: "(1) failure to observe teaching activities; (2) theoretical impoverishment; (3) use of inadequate criteria of effectiveness; and (4) lack of concern for contextual effects" (p. 13). Thus in order for research to improve, studies had to be theoretically based, to involve systematic observation of classroom behavior, to have pre-established criteria for determining affective or cognitive changes, and to recognize the effect context (the ability level, age, sex, and socioeconomic backgrounds of students and other extraneous variables affecting teacher stability) has upon response to teaching.

Performance-based Research Related to Teacher Effectiveness

While many of these problems still characterize some of the recent research in teacher effectiveness, critical analysis and constructive recommendations from authorities such as Dunkin and Biddle (1974), Medley and Mitzel (1963), Rosenshine and Furst (1973), and Wallen and Travers (1963) have helped redefine and redirect this field of research. Process-product research has played an important role in the emergence of new knowledge linking teacher behavior with

student achievement (Brophy, 1979). Process-product research is investigative research that attempts to link observed teacher behaviors to student outcome measures. This research is correlational; thus, it can only verify relationships, not causations. Nonetheless, process-product research is providing new directions for observing and evaluating teacher behaviors.

In 1970, Rosenshine alerted investigators toward directing further research in relating achievement to process variables. From a review of more than thirty studies involving process-product classroom observations, Rosenshine identified eleven variables that most consistently related to student achievement. Five of these variables (teacher clarity, task-oriented and businesslike behavior, student opportunity to learn criterion material, teacher use of structuring comments, and teacher probing) later compared favorably with the results of larger, more theoretically-based process-product investigating.

These major studies (Brophy & Evertson, 1974; Fisher et al., 1978a; McDonald & Elias, 1976; Soar, 1973; Stallings, 1973; Stallings & Kaskowitz, 1974) which are described below provided strong support to the belief that teacher behaviors are positively associated with student achievement gains. The Texas Teacher Effectiveness Program (Brophy & Evertson, 1974) and the evaluative studies of Project Follow Through (Soar, 1973; Stallings, 1973; Stallings & Kaskowitz, 1974) shared

contextual similarities of reading and mathematics instruction for primary children from low socioeconomic backgrounds. They agreed in the recognition of student achievement having positive and significant relationships with direct time on academic activities, direct and narrow questions, positive feedback, student attention to task, and supervised student study in small and large groups. Moreover, many of their findings concurred with the conclusions of the Beginning Teacher Evaluation Study (Fisher et al., 1978a; McDonald, 1973) which was also concerned with reading and mathematics instruction in the elementary school (Rosenshine, 1976).

Follow Through Evaluative Studies

The federally funded Follow Through program was begun in 1967 to improve the learning opportunities of economically disadvantaged students in kindergarten and primary grades. The program was meant to supplement and perpetuate the work of Head Start through experimental classrooms sponsored by institutes throughout the United States. Large-scale observational studies were conducted to measure the success of the experimental projects and to examine those teaching behaviors associated with learning growth.

The 1970-1971 Follow Through study by Soar (1973) concerned observational data gathered from 289 kindergarten through second-grade classrooms. This study's most consistent findings showed student achievement to be

directly related to greater amounts of teacher control, focus, convergence, and structured teacher-student activity time spent on reading.

During 1971-1972, Stallings (1973) gathered observational data from twelve Follow Through sponsoring sites. Correlational analysis of these data showed that students achieved more when given individual adult attention and when provided frequent reading activities. In addition, Stallings found the most effective teaching process for task-oriented activities was the stimulus-response-feedback system.

A later evaluative study (Stallings & Kaskowitz, 1974) involved seven Follow Through sponsors and included observations in 136 first-grade and 135 third-grade classrooms. Findings from this study showed first graders to be more task persistent when an adult worked with them on a one-to-one basis. Small-group instruction for first graders was directly related to high test scores in reading and mathematics, but for third graders large-group instruction was directly related to reading and mathematics achievement. In her executive summary of this study, Stallings (1974) stated:

> The length of school day and the average time a child spends engaged in a reading activity are related to higher reading scores in both first grade and third grade. . . . Higher reading scores are also found in classrooms where there is more reading or discussions of reading between adults and children. Thus, opportunity and exposure to reading have an important relationship to good performance on tests. (p. 3)

Texas Teacher Effectiveness Project

The Texas Teacher Effectiveness Project (Brophy & Evertson, 1974) was a two-year, replicated, naturalistic-correlational study of the presage and process variables which affect student learning. Data were gathered from over 40 second- and third-grade teachers who were consistent in obtaining yearly learning gains from their students. The classrooms used in the study were located in Title and non-Title schools. Findings indicated that optimal teaching in low socioeconomic (SES) schools differs from optimal teaching in high SES schools. Students in low SES schools tended to achieve more when afforded more opportunities for positive feedback through teacher-structured lessons, the physical practice of skills, and relatively short and easy assignments. A negative correlation with learning was found for low SES students who asked for teacher help with confusing or difficult assignments. In contrast, high SES students achieved more when assignments were challenging, when questions involved generalizing, and when less teacher supervision was offered. High SES students tended to respond better than low SES students to some indirect teaching, such as open-ended discussions, although this tendency was reflected through mixed and weak positive correlations. Low SES students did not tend to benefit from teachers' verbalizations which placed lessons into context through reviews of old materials before a lesson and

summarizing reviews following a lesson. High SES students did benefit from such procedures. Since many of their findings did not agree with earlier support of indirect teaching (Flanders, 1970), Brophy et al. interpreted them as suggesting that indirect teaching is more important for higher grade students than for lower grade students, especially those who have low cognitive maturity.

The above does not de-emphasize the need for teacher-student verbal interaction because there were occasions when direct verbalizations did have beneficial associations. In both the low and high SES schools, teachers who observed students work by looking over shoulders and commenting were relatively successful. Teachers in low SES schools who rephrased questions or gave clues correlated positively and consistently with student learning gains. However, learning gains of high SES students correlated weakly with teacher probing. The researchers' explanation for this difference was that low SES students tended to respond with guesses to questions, and teacher probing evidently caused them to stop and think while high SES students responded after thinking and thus, did not benefit from further probing. Other data concerning feedback contained many inconsistencies and showed contrasting correlations between low SES schools and high SES schools. Yet, as a general rule, low SES students benefited the most from extended feedback.

Brophy and Evertson used high inference estimations of teacher time utilization and found some surprising correlations. Structured teaching time spent in language arts was not related to learning gains except for some negative correlations in word-knowledge and reading gains in low SES schools. The investigators explained that this finding was related to the lack of variability among teachers since all the teachers spent a majority of their time on language arts.

Other results were more consistent with expectations or, at least, were less confusing. For example, the time teachers in low SES schools spent in small reading groups correlated positively with reading gains while teachers in high SES schools had negative correlations between time spent in small reading groups and reading achievement. Evidently, high SES students had gained more cognitive maturity than their low SES counterparts, and they no longer needed the fundamentals often taught in primary-grade reading groups.

Finally results seem to be inconsistent in confirming whether high or low SES students are in need of classrooms having a continual flow of work activities involving teacher-student interactions. Low SES classrooms rated as having smooth and efficient transitions and as being regularly monitored by teachers had positive correlations with learning gains. No such relationships were found in

high SES classrooms. Conversely, correlations using percentages of time spent in transition were mixed and uninterpretable for the low SES classrooms. In addition, when data from teacher questionnaires were used to determine the percentage of teacher time spent at his or her desk, high percentages had weak and mixed relationships for low SES students and negative correlations for high SES students. Despite these conflicts, one can interpret from these findings that a continual flow of work activities involving teacher-student interactions was not detrimental and was generally helpful for both low and high SES students depending on how one chooses to measure it.

The Texas Teacher Effectiveness Project provided many answers but raised even more questions. Hence, the study has served as the source for an abundance of new hypotheses to be tested. Many teacher-student interactions did not provide meaningful analyses and expected results possibly because they so seldom occurred, the variance among the teachers was too small, and many of the categories were too general or ambiguous. Yet, the study provided strong evidence that teaching practices must be adjusted to meet the needs of students according to their SES backgrounds and grade levels.

Beginning Teacher Evaluation Study (BTES)

The Beginning Teacher Evaluation Study was a multi-million dollar project conducted for the California

Commission for Teacher Preparation and Licensing to help guide the commission in formulating policies and standards for preparing and licensing teachers in California. The overall purpose of the study was to identify classroom conditions and procedures that foster student learning in elementary schools. The study consisted of three phases: Phase 1 (1972-1973) involved planning and development; Phase 2 (1973-1974) included a large field study for the generation of hypotheses, development of a measurement system, and estimation of influence of a number of factors on both pupil learning and teaching performance; and Phase 3 (1974-1978) consisted of a series of field studies on teacher effectiveness and the formulation of a model of classroom instruction (Fisher et al., 1978b).

During Phase 2, the Educational Testing Service conducted a field study of 41 second-grade teachers and classrooms and 54 fifth-grade teachers and classrooms. Both mathematics and reading instruction were observed and analyzed. Findings related learning to a pattern of teaching practices and not one particular practice; moreover, effective teaching practices were found to differ among grade levels and subject areas (McDonald & Elias, 1976). In McDonald's (1976) summary report of the data analysis, he described second-grade reading as being devoted to developing decoding skills and rudimentary comprehension skills. McDonald deemed that the instructional patterns

most effective for this grade level included the following components: (1) a variety of instructional materials; (2) constant monitoring of student behavior and provision of corrective feedback in order to maintain a high level of student engagement time; and (3) maximized direct instructional time for individuals and small groups.

An ethnographic study conducted by Tikunoff, Berliner, and Rist (1975) of the Far West Laboratory for Educational Research and Development was the initial endeavor of Phase 3. Raw records of classroom behavior were obtained from classrooms of ten less effective and ten more effective teachers of reading and mathematics in both second and fifth grades. Protocols were obtained from all forty classrooms. Raters analyzed these descriptions and identified 61 variables that distinguished between the more effective and less effective teachers. A statistical analysis revealed that 21 variables were generic, that is, were more discriminating between more and less effective teachers. Variables such as adult involvement with students; teacher attentiveness to students' talking, reciting, and reading; student engagement with learning tasks; teacher monitoring of learning; teacher structuring of lessons; and teacher waiting for student responses were consistently and significantly related to more effective teachers of second-grade reading. Overall, the analysis confirmed the belief that in classrooms with management problems, direct

instruction is limited. Most importantly, Tikunoff et al. identified variables to be included in other Phase 3 studies.

One of these studies (Fisher, Filby, Marliave, Cahen, Moore, & Berliner, 1978b) examined the naturally occurring variations in allocated and engaged instructional time in second- and fifth-grade reading and mathematics. Allocated time was determined through records kept by teachers while engaged time was determined by direct observation by outside observers. Both methods of determination classified second-grade reading into the following ten general categories: (1) long vowels; (2) other decoding skills; (3) context clues; (4) compound words; (5) other word structure; (6) word meaning; (7) comprehension; (8) areas related to reading including dictionary skills, study skills, grammar, and creative writing; (9) reading practice; and (10) miscellaneous including listening, penmanship, and dramatics. An analysis of the data collected on second-grade reading revealed that on the average one-third of reading time was allocated to decoding, 23% to areas related to reading, and 10% each to comprehension, reading practice, and miscellaneous. Time spent in those categories deemed to have a larger more overlapping effect on acquisition of reading knowledge was time which related most strongly to achievement. For example, study of compound words showed less association to learning than did decoding.

Estimated engaged time had a stronger positive relationship to reading achievement than did allocated time. Nonetheless, positive, though relatively weak relationships, were found between instructional variables and reading achievement.

From the BTES evolved a model of classroom instruction which was based on the premise that achievement test scores are directly affected by student aptitudes and student classroom learning, and, in turn, student classroom learning is affected by student aptitudes and classroom instructional processes and environment (see Figure 1).

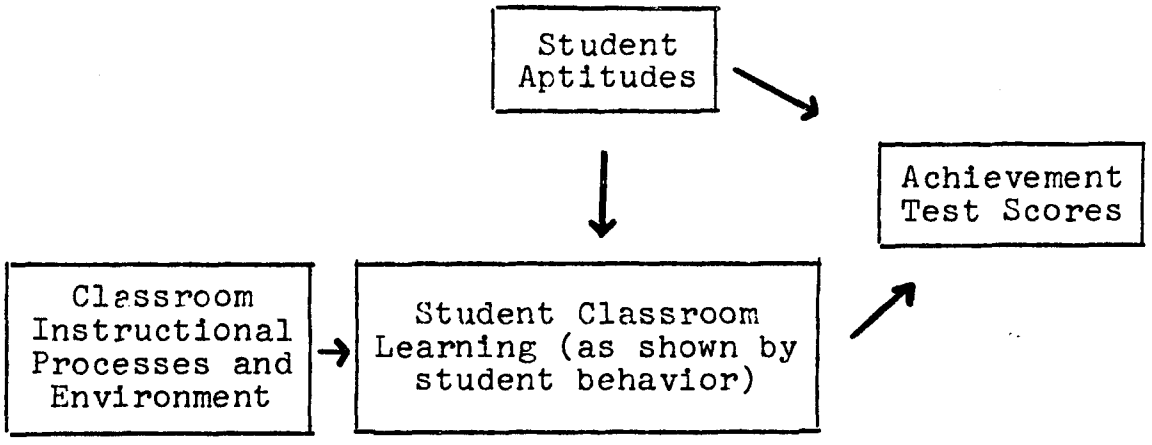

Figure 1. BTES model of classroom instruction (Fisher et al., 1978a, p. 2)

Fisher et al. (1978a) sought to determine the extent to which each of the teaching processes of diagnosis, prescription, presentation, monitoring, and feedback affects learning. By focusing on student classroom behavior, they were able to isolate the variable Academic Learning Time (ALT), which is "the amount of time a student spends

engaged in an academic task that the student can perform with high success" (p. 2). The more ALT a student acquires the more he or she learns.

Data on teaching behavior, classroom environment, student ALT, and student achievement were collected from second- and fifth-grade classrooms. Fourteen major findings were reported. They are listed below with the first five findings representing the relationship between ALT and student achievement and the latter nine findings representing the relationships between instructional processing and classroom environment.

1. The amount of time that teachers allocate to instruction in a particular curriculum content area is positively associated with learning in that content area.
2. The proportion of allocated time that students are engaged is positively associated with learning.
3. The proportion of time that reading or mathematics tasks provide a high success rate for a student is positively associated with student learning.
4. The proportion of time that reading or mathematics tasks provide a low success rate for a student is negatively associated with student learning.
5. Increases in Academic Learning Time are <u>not</u> associated with decreases in attitude toward mathematics, attitude toward reading, or attitude toward school.
6. The teacher's ability to diagnose student skill levels is related to student achievement and Academic Learning Time.
7. The teacher's ability to prescribe appropriate tasks is related to student achievement and student success rate.
8. More substantive interaction between the student and an instructor is associated with higher levels of engagement.
9. Academic feedback is positively associated with student learning.

10. Structuring of the lesson and giving directions on task procedures [are] positively associated with student success rate.
11. Explanation specifically in response to student need is negatively associated with student success rate.
12. More frequent reprimands for inappropriate behavior are negatively associated with student learning.
13. The teacher's value system is related to Academic Learning Time and to student achievement. Teacher emphasis on academic goals is positively associated with student learning.
14. A learning environment characterized by student responsibility for academic work and by cooperation on academic tasks is associated with higher achievement. (Fisher et al., 1978a, pp. 8-18)

Therefore, according to the BTES conclusions, successful student achievement occurs when teachers emphasize academics in an environment where they and their students work responsibly and cooperatively toward academic achievement. Successful teachers recognize that their primary functions are diagnosing, prescribing, presenting, monitoring, and providing feedback. Classrooms where teachers spend a large proportion of time repeating directions to assignments, urging students to get back to work, and berating students for poor work are usually classrooms where teachers have planned ineffectively. These teacher behaviors are usually indicative of teacher misdiagnosis of student needs and of inappropriately prescribed student tasks. Appropriate tasks are successfully completed when teachers spend time structuring the lesson by first presenting the concepts and skills to be studied and practiced and then by giving clear directions concerning what

the students are to do. Teacher time spent helping students who are unsuccessful in completing assignments either because of the students' inability to follow directions or because of their lack of conceptual understandings is unproductive time. Instruction which includes substantive interaction often has a questioning-answering process which allows the teacher to guide and monitor student process. Monitoring as described by the BTES is the teacher function of keeping track of student progress and includes the teacher behavior of circulating around the room observing students as they work and of providing feedback whenever necessary. The more immediate academic feedback received by students, the more attention they pay to the task at hand and the more they learn. Thus, in assessing teacher effectiveness observers can attempt qualitative evaluations by accounting for teacher utility of time. The more time teachers spend substantively interacting with pupils who are successfully engaged in learning tasks, the more effective they are (Fisher et al., 1978a).

Other Studies Pertaining to Time and Direct Instruction

While the BTES, Texas Teacher Effectiveness Project, and the Follow Through evaluative studies are major supporters of the belief that teachers who allow more time for direct instruction tend to have students who achieve more, they are not alone. As early as 1963, Carroll formulated a model

which proposed that achievement is determined by time needed for learning and time actually spent in learning. According to Carroll, the time a student needs for learning is influenced by the student's aptitude (required time to attain mastery of a learning task), ability to understand instruction, and the quality of instruction (the degree to which the presentation, explanation, and ordering of task elements to be learned approach the optimum for a given learner). The time a student actually spends in learning is determined by the time allocated to learning and the student's perseverance. Obviously, for Carroll, time is the key to mastery learning.

Bloom (1968) experimented with a teaching strategy based on Carroll's theory and began to accumulate evidence of students' success. Until the aforementioned large-scale process-product studies, these experiments and most other studies that tested Carroll's model or derivatives of it were limited to older students or to subjects that did not have prerequisites to learning. Thus, in keeping with the scope of this paper descriptions are provided below of the few studies which sought to link quantity of schooling and direct instruction to reading and language arts achievement in elementary schools, particularly in primary classrooms.

Wiley (1976) was concerned with the effect of quantity of schooling on a school-wide basis when he analyzed the Equality of Educational Opportunity survey data pertaining

to the Detroit Metropolitan area sixth-grade sample. He calculated the average exposure to schooling by obtaining the product of average daily attendance, length of school day, and length of school year. He found that the variations in quantity of schooling related positively and significantly to reading and mathematics achievement.

Karweit (1976) repeated the Wiley analysis using the same data base and had similar findings. Yet, when she used the same regressions on data from other inner city schools and from suburban schools, she found little evidence to support Wiley's conclusion that quantity of schooling exerts a strong positive effect upon achievement growth. Moreover, a similar analysis using attendance of third, fifth, seventh, and ninth graders in the state of Maryland showed that school attendance was only modestly related to achievement. Despite her findings, Karweit concluded that the quantity of schooling has the potential for being an important factor in influencing schooling outcomes when applied to individual student differences or to the cumulative effect of chronic absenteeism.

In the Cooperative Research Studies in First-grade Reading, Bond and Dykstra (1967) also examined the association of attendance and reading achievement. They found that teacher and pupil absences were to a slight degree negatively related to all five subtest results.

Other studies have dealt with the actual attentiveness of students once they were in school. Samuels and Turnure (1974) found that first-grade students who were observed as being attentive during reading follow-up work achieved significantly higher word recognition scores than did inattentive students. Similarly, McKinney, Mason, Perkinson, and Clifford (1975) discovered that the work involvement of second graders during their language arts periods throughout the year was indicative of their cognitive growth by the end of the year. Both studies supported the belief that students learn when attentive to task.

Moreover, results from other studies associated student attentiveness to task with teachers who are directly involved with instruction. In an investigation of the relationship of a variety of school-level climate variables and the mean school achievement of fourth- and fifth-grade classes, Brookover, Schweitzer, Schneider, Beady, Flood, and Wisenbaker (1978) found that in higher achieving schools teachers spent a larger proportion of class time on instruction.

During the first year of the CRAFT Project implementation, direct instructional time emerged as a very important influence upon pupil achievement. Although the two major approaches, skills-centered and language experience, were approximately equal in the amount of total instructional

time teachers devoted to each, the amount of reading time was significantly different. The skills-centered teachers devoted 55% of their time to reading and 45% to supportive activities such as story-telling, discussion, writing, dramatization, and other language arts, while the language-experience teachers devoted only 39.5% to reading and 60.5% to supportive activities. The time spent in reading was the variable positively correlated with reading achievement. This was true whether the method being used was basal reader, Phonovisual, language experience, or language experience with audio-visual aids. Whenever more supportive time was spent in an activity most characteristic of a reading method, it was significantly, directly related to improving the results of that method. For example, time spent in sight word teaching was most significant for basal-reader teachers, and time spent in writing, dramatization, social studies, and science was most significant for language-experience teachers (Harris & Serwer, 1966).

Results were considerably different following the CRAFT Project's continuation into the second grade. No consistent pattern was found between teacher instructional time and achievement. Actually, results suggested that a saturation point was reached after a while and large amounts of certain activities were detrimental. Moreover, the only significant correlation was negative.

Teachers who spent more time reading to their second graders obtained below average results. The context had changed, pupils' needs were different, and teaching practices had not been adjusted to meet these needs (Harris, Morrison, Serwer, & Gold, 1968).

Porcher (1974) compared second- and third-grade teachers according to their amounts of time-in behaviors which were spent actually interacting with students about reading activities and time-out behaviors which involved other activities such as finding a place in materials, discussing unrelated subjects, and correcting behavior. She found that teachers' time-in behavior was significantly correlated ($p < .01$) with pupils' reading achievement. The total percentage of time-in behavior for the 19 teachers in the study ranged from 57% to 96% and had a mean of 83%. Hautala and Aaron (1977) assumed from the Porcher study that since a significant correlation between teachers' time-in behavior and students' reading gains was found, the more successful teachers had a higher rate of time-in behavior. Therefore, when they used the same observation scale as Porcher to observe 24 primary teachers with highly stable success rates and found that these teachers' time-in behaviors ranged from 74% to 100% with a mean of 88%, the implications were obvious--the more teacher-student substantive interaction in reading, the more student achievement gains.

Time utilization and direct instruction entered into the findings of Bennett, Jordan, Long, and Wade (1976) when they

compared the achievement of British primary students in formal, informal, and mixed classrooms. They found that formal classrooms had more achievement gains in English and mathematics and that mixed classrooms were more successful in reading. Furthermore, they found that the effectiveness in obtaining achievement gains was not at the detriment of the students' creativity and self-concepts. Overall, informal classrooms were least successful in all subject areas. Yet, one informal classroom had high gains in every achievement area and in one area was the highest gain class. The teacher of this class provided an integrated language arts program as did other informal teachers. What differentiated her from them was the large amount of time she spent on teaching English and mathematics. In fact, her instructional time equalled or was in excess of, the instructional time of many formal teachers. Although this teacher did not insist upon specific skills practice, she was task-oriented and employed a variety of means for developing skills. Bennett et al. concluded from all their findings that the more effective classrooms were orderly, systematic, warm, teacher-directed, and task-oriented with emphasis upon cognitive outcomes.

The First-grade Reading Group Study was an effort by Anderson, Evertson, and Brophy (1979) to substantiate through experimentation the findings of earlier process-product correlational studies. Twenty-seven first-grade

teachers from predominantly middle-class schools participated in the study. Seventeen teachers in the experimental group were given an instructional model to follow. This model was made of 22 principles which had been identified from correlational studies as being most effective in conducting small-group reading instruction. Ten teachers in the experimental group and all teachers in the control group were observed regularly throughout one year. The remaining teachers in the experimental group were not observed. The variables observed and measured concerned how the teacher obtained and kept students' attention, introduced lessons, called upon individuals in a group, responded to individual differences in a group, provided feedback to incorrect answers and non-responses, provided feedback to correct answers, used praise and criticism, questioned students, and used time. Students in the experimental group achieved significantly more than students in the control group. Patterns in the data suggested that the following four principles fostered reading growth:

1. Provide students with a greater opportunity to learn by spending more time with groups (30 minutes as opposed to 20 minutes);

2. Provide students group practice opportunities where teachers can monitor understandings, provide feedback, and adjust lessons to needs;

3. Provide students appropriate feedback (overviews, sustained feedback following errors) concerning the structure of the skills involved; and

4. Provide good classroom management where daily tasks are routinely carried out, students work without distractions, and transitions are efficient and quick.

The latter principle, the need for teachers to have good managerial control of their classes, was repeated throughout the literature on teacher effectiveness. Others (Brophy & Putnam, 1979; Cantrell, Stenner, & Katzenmeyer, 1977; Jackson, 1968; Kounin, 1970) who have dealt specifically with school behavior control have concluded that most disruptions are caused by poor teacher managerial abilities. Subsequently, they have found that the time teachers spent handling disruptions minimized student task involvement and related negatively to student achievement.

Together, process-product research not only endorses maximizing the amount of instructional time, but it also supports having that instruction directly performed. According to Good (1979) direct instruction, or active teaching, occurs when a

> teacher sets and articulates the learning goals, actively assesses student progress, and frequently makes class presentations illustrating how to do assigned work. Direct instruction does not occur when teachers do not actively present the process or concept under study, when they fail to supervise student seatwork actively, or if they do not hold students accountable for their work. (p. 55)

The lack of a sufficient amount of direct instruction was a major concern of a recent study by Durkin (1978-1979). This investigation was divided into three substudies: (1) an examination of the amount of comprehension instruction in fourth-grade reading and social studies; (2) comparisons of reading and social studies instruction in grades three through six and among individual schools; and (3) an examination of reading instruction and how it affected individual students. Each of these substudies supported Durkin's (1977) earlier contention that almost no comprehension instruction was occurring either in reading or social studies. In fact, Durkin (1978-1979) reported that comprehension instruction occurred less than 1% of the 4,469 minutes of observation of the reading periods. Interestingly, neglect of comprehension instruction was not because instruction was being diverted to other reading skills since very little observable evidence was found of instruction in structural analysis, phonics, and word meanings. Instead, teachers were observed spending a major proportion of their class time giving and checking assignments. Other large chunks of teacher time were spent in transition between activities or in noninstructional activities.

Durkin's findings are startling. If the students were not being provided instruction, or the opportunity to learn, then how did they learn? In a critique of Durkin's

article, Hodges (1980) provided an explanation. Indeed, according to Hodges, students were receiving instruction; however, Durkin's definitions were too narrow to include many teaching practices which help students develop understandings or skills. For example, Durkin defined comprehension instruction as something the teacher does or says "to help children understand or work out the meaning of more than a single isolated word" (p. 488). Yet, she excluded activities such as preparation before reading, questioning after reading in order to provide feedback to insure appropriate understandings, and helping with assignments. When Hodges reanalyzed Durkin's data using broader definitions, she found that teachers spent 29.7% of reading time in comprehension instruction.

Nevertheless, no matter whose definitions are used, Durkin's observations do create concern. According to her descriptions, direct substantive interaction was limited because of the brevity of explanations, the use of a vast number of ditto sheets, and the large amount of time spent in handling discipline problems and transitions. Moreover, teacher behavior seemed to be the same whether or not the sizes of the classes were small or large or whether or not the teachers had aides to assist them.

The Effect of the Reduction of Adult-student Ratio

Whether or not substantive interaction increases when adult-student ratios are lowered is the question that the

present study addresses. According to the aforementioned studies, if teachers can affect the amount of academic learning time of students through maximizing direct instructional time for individuals and small groups, they can affect learning gains. In order to maximize the opportunities for direct interaction, schools have made organizational changes by reducing class size or by providing teachers with aides to assist them. Yet, according to Durkin's observations neither of these changes resulted in increased substantive interaction. Whether or not other research literature reported similar findings was examined by this investigator and those findings deemed relevant to the present study are presented in the following pages.

The Effect of Class Size on Teacher Effectiveness

Other investigators have also expressed concern that reduction in class size would not have an effect on student achievement unless teachers took advantage of the opportunity and provided more direct instruction to meet better the unique needs of each student (Chang & Ogletree, 1979; Haberman & Larson, 1968; Ryan & Greenfield, 1975; Shapson, Wright, Eason, & Fitzgerald, 1978; Smith & McCluskey, 1976). Reviews of studies which have actually examined the effect of class size on student achievement have reported conflicting results (Otto & von Borgersrode, 1950, pp. 212-126; Ryan & Greenfield, 1975; Vincent, 1969, pp. 141-146).

Glass and Smith (1978) devised a meta-analysis procedure to aid them in examining approximately 300 documents on class size and achievement in order to determine whether they actually supported any trends. The two analysts identified 77 studies that yielded 725 comparisons of the achievement of smaller and larger class sizes. Approximately 60% of the comparisons were positive indicating that the smaller the class the greater the achievement. Moreover, these effects were stronger in studies with good design characteristics, and almost half of the studies on class size were considered by Glass and Smith as being poorly designed. Those comparisons obtained from studies exercising good experimental control showed a direct relationship with achievement, especially when class size was reduced below 20 students.

Nevertheless, a significant reduction in class size is expensive. For example, in North Carolina during the 1979-1980 school year if class sizes in kindergarten through third grade had been reduced to 15 students per self-contained classroom, 8095 more teachers would have been required which in terms of their salaries would have increased cost by approximately $114,277,115. (Note that this excludes any reference to providing the facilities for 8095 more classes.) In contrast, if class size had remained the same, but each classroom had had an aide, the total cost of their salaries would have been approximately

$63,633.400 (Hill, Note 1). In other words, a significant reduction in class size could have possibly cost the state approximately $50,643,615 more than aide services in each of the kindergarten through third-grade self-contained classrooms (see Appendix A for explanation of cost analysis).

The Effect of Teacher Aides on Teacher Effectiveness

Authorities (Hyer & McClure, 1973; Stennett, 1973; Ward & Tikunoff, 1979) have reviewed the needs of schools and have suggested that the employment of teacher aides is a viable and less costly alternative to class size reduction. They contend that aide services can possibly accomplish what reduction in class size can accomplish--that is, to increase the opportunities of more precisely meeting the emotional, physical, and academic needs of each individual student and to uplift teacher morale by improving working conditions. Yet, just as with reduction of class size, conflicting reports abound concerning the effectiveness of aides and the ability of teachers to utilize properly their services.

Teacher attitudes toward aides. In a 1967 national opinion poll conducted by the National Education Association (NEA) Research Division more than half (51.4%) of the teachers who replied and were assisted by aides indicated that aides were of great assistance, 38.4% indicated they were of some assistance, and 10.2% indicated

they were of little or no assistance. Of the elementary teachers with aides, 73.0% reported that aides provided assistance with clerical duties; 6.3% reported aides assisted with large-group instruction; 18.5% reported aides assisted with small group or individual instruction; 15.7% reported aide help in preparation and use of instructional resources; and 10.7% reported assistance with classroom environment.

Ten years later in another NEA survey 47% of the elementary teachers who responded reported having some amount of aide services. Over time the types of assistance had shifted and the number of teachers reporting help in the various areas had increased. This time 70% of the teachers reported aides assisted with small-group instruction; 68.7% reported aides assisted with secretarial duties; 52.1% reported aides helped with grading papers; and 44.1% reported aides assisted with classroom environment (NEA Research Division, 1977).

In 1978, the North Carolina Association of Educators surveyed random members of its organization. In the survey elementary teachers were asked their opinions concerning aide services. Of the 279 elementary teachers responding, 59.8% had an aide. Overall, 63.4% considered the aide as being a <u>big help</u>, 32.2% considered the aide as being <u>some help</u>, and 4.4% regarded the aide as <u>a liability</u>. When asked if their aide actually performed teaching duties,

18.7% said *often*, 53.6% said *sometimes*, and 27.7% said *never*. If given a choice, 65.2% of the elementary teachers responding to the survey would rather have had a significantly smaller class size than an aide (Mooney, Note 2).

Two other North Carolina studies also explored the satisfaction or dissatisfaction toward the utility of teacher aides: a study of the Comprehensive School Improvement Project (CSIP) and a study of the aides in the programs under Title I of ESEA.

The CSIP which began in 1963 and lasted until the late 1960s was a joint undertaking of the State Board of Education and the Ford Foundation aimed at improving the instructional program in the primary grades. Aides were hired to perform nonprofessional duties in order to permit teachers to concentrate on instruction. In 1967, when teachers, principals, supervisors, superintendents, and college consultants were asked how they perceived the total effectiveness of CSIP aides, they gave strong attitudinal support for the aides. In fact, no more than 2% in an evaluator category held reservations. Over 94% of those questioned felt that aides positively influenced the instructional program (Emmerling & Chavis, 1967).

The researchers conducting the Title I, ESEA study sent a survey to superintendents' offices in 169 school units. Of those contacted, 157 used teacher aides in the Title I programs. None of these units reported unfavorable

reactions to the aides, and only two units were neutral in their opinions. Overall, comments from North Carolina educators were very favorable toward aides (N. C. Department of Public Instruction, State Administration, Title 1, ESEA, 1967).

Other studies of teacher attitudes toward aides conducted outside the state have had similar findings. In a study conducted in Dade County, Florida, Jackson (1972) compared attitudes and job satisfaction of 50 teachers with aides and 50 teachers without aides and found that teachers with aides scored significantly higher on job satisfaction than those without. Furthermore, teachers with aides reported positive attitudes toward the use of aides because of the relationships they had developed with the aides and because of the many new possibilities the use of aides had opened for expanding learning opportunities. In an Oregon study Thorlacius (1969) found that teachers who perceived aides as colleagues instead of as subordinates more extensively utilized the aides. Furthermore, the acceptance of aides was influenced more by school-related factors than by personality characteristics.

The effectiveness of aide instructional services upon student achievement. During the past twelve years, studies have been made which prove that aides can successfully provide instructional services. Hayden, Murdock, and Quick (1970) reported that trained teacher aides were able to

improve the attention span of kindergarten children. Schoeller and Pearson (1970) reported increases in children's reading achievement and attitudes when they were provided instruction by trained volunteer reading tutors. Guess, Smith, and Ensminger (1971) found mentally retarded children's speech and language skills were developed by teacher aides who used the Peabody Language Kit. When Karnes, Teska, and Hodgins (1970) compared the pre-school instructional programs of professional teachers to those of paraprofessionals who had received sustained inservice training and daily supervision, they found that paraprofessionals fared as well as the professional teachers. Lambert (1976) used a multiple regression analysis to determine the contributions of a teacher-aide component of a supplementary education program. The results of the analysis demonstrated that the number of minutes in language arts and mathematics that aides spent with second and third graders assigned to them related significantly to their reading achievement. Burt (1975) discovered that when trained paraprofessionals worked with first-grade classroom teachers in the instructional process in traditionally low-scoring schools, reading scores improved significantly.

The most well-known experiment concerning teacher aide effectiveness as a supportive member of a teaching

team was conducted in Minneapolis in 1968. For approximately fifteen weeks children in nine kindergarten classes were provided instruction in reading and number readiness. Three of these classes were assigned no aide, three classes were assigned one aide each, and three were assigned five aides each. All teachers and aides were provided an in-service overview of the readiness program. All aides spent approximately 40% of their school time at menial tasks and the rest of their time helping children as the aides and their teachers deemed necessary. Posttests revealed that classes with one aide and one teacher made the most gain when compared to the other classes. Classes with one teacher and five aides each made the least gain. Evidently, too many aides interfered with effective teaching (Goralski & Keri, 1968).

The effectiveness of aides in providing students with nurturant support. One belief is that one of the main contributions an aide can make is to provide nurturant or psychological support to students. By having two people responsible for creating a receptive atmosphere for learning, the chances are doubled that a child receives what Purkey (1978) described as "invitations to learning." The more children are exposed to someone who questions them, pauses for their responses, listens to their questions and answers, nods at them in approval, frowns at them in disapproval, and shows awareness of their being, the more

children will build their self-concepts, and hence, their abilities to achieve (Purkey, 1970).

Frelow, Charry, and Freilich (1974) found that after teacher assistants were introduced into primary classrooms, second- and third-grade students who scored in the lower quartile on the Metropolitan Achievement Test made significant progress in reading and mathematics compared to previous expectancies. Moreover, students who had previously been behavior problems demonstrated a trend toward more positive behavior. This trend was believed to have been directly influenced by the teacher assistants who gave attention to each child's personal and attitudinal growth.

The New Careers Program was developed to encourage the poor, the minorities, and the undereducated to become teacher aides in order to bridge the school with the low income and minority communities, to bring the disadvantaged adults into the teaching profession, and to provide the disadvantaged with personal opportunities for growth. The feeling was that aides from the same backgrounds as the students would be more apt to provide more appropriate psychological nurturance than aides from alien backgrounds (Bennett & Falk, 1970).

In 1970, the Career Opportunities Program (COP) was formally launched to begin providing university training and field-based experiences for over 6,000

low-income participants who had already climbed or would climb a career ladder. Carter (1977) reported several favorable observations made by principals who had used COP aides. These principals credited COP aides as contributing to improvements in student behavior, school attendance, and academic achievement.

Aide fulfillment of a nurturant role was evident in an evaluation of the Minneapolis aide program; 23 aides in one school were interviewed and responded to a checklist containing types of psychologically supportive involvement that they might have had with children. More than 30% of these aides stated that each of the contacts listed occurred often or once in a while. Items which were responded to as occurring often or once in a while by over 90% of the aides included involvements such as a child waving at the aide, a child stopping and talking to the aide outside of the school, a child wanting to sit or stand near an aide, a child holding an aide's hand, a child showing an aide his or her art work, a child showing an aide a valued possession or new article of clothing, a child hugging an aide, and an aide stopping children from fighting. Obviously, concluded the study, aides were very involved in providing psychological support to children (Bennett & Falk, 1970, pp. 181-184).

Further search for studies pertaining to the nurturant effectiveness of teacher aides revealed a study by Bergquist

(1968) who examined the effect of one teacher aide per six elementary school staff members on student attitudes and achievement by comparing two control-group schools and two experimental-group schools. One might expect that such a high teacher-aide ratio would have little or no effect on student achievement and attitudes. Indeed, Bergquist found no evidence either favoring or opposing the utilization of teacher aides.

The effectiveness of aides on teachers' utilization of school time. In order for the classroom aide to contribute to the educational quality of a school, teachers must make adjustments in their own behaviors. Findings are mixed concerning whether or not teachers have utilized aide services for the betterment of the efficacy of the class.

Evidence from the Minneapolis teacher aide program suggests how assistance of aides can be used to improve teacher efficiency. When these teachers were asked how much time the use of an aide gave them for additional planning and preparation, their responses ranged from 0 to 30 hours per week and the median time increase was 14 hours per week. When asked how much additional time did the aides provide so that teachers could work directly with pupils, the teachers responded with a range of 0 to 20 hours per week which was a median time of 2 to 3 hours per week (Bennett & Falk, 1970, pp. 179-180).

In Portland, Oregon, a comparison was made of the instructional time of first- to fourth-grade classrooms with a teacher-aide team to first- to fourth-grade classrooms with only a teacher. Teachers with aides were able to spend 20% more time in instructional activities and 30% more time at small group or individual instruction than did the teachers without aides. In addition, an average of 129 minutes a day was spent in instruction by the teacher aide which increased the total time spent in instruction in the classroom with the aide to 250% per day more than in the single-teacher classroom (Croft Administrator's Service, 1972).

Sauers (1967) reported that aides saved teachers substantial amounts of time by relieving teachers of clerical work, routine classroom duties, and some instructional tasks. They enabled teachers to spend more time improving educational opportunities.

Miller's (1970) findings were in absolute contradiction to the above studies. He and paid observers examined the use of teacher time to ascertain whether the presence of an aide affected the amount of instructional time. No evidence was found to support the belief that aides increased teacher instructional time. Actually, teachers with aides spent more time performing clerical chores than did teachers without aides. Moreover, no difference in achievement test scores were found between classes with

aides and classes without aides. The only noticeable benefit was that slower students in classes with aides scored slightly better than slower students in classes without aides.

Other evidence exists which supports Durkin's contention that teachers are not making enough suitable behavioral adjustments in order to best utilize aide services. For example, White (1974) assessed the total amount of time teachers with and without aides worked at school and at home on teaching activities. Although her findings were not as condemning as Miller's, they did show obvious room for teachers' making adjustments. Teachers with aides spent significantly more time in instructional/interactive and miscellaneous and significantly less time in management/pre-active. No significant differences were detected in activity categories labeled as instruction/pre-active, evaluation/pre-active and interactive, and management/inter-active.

Kunkel (1968) investigated the communication patterns of teachers not using aides and teachers who shared the services of one aide per six teachers. He found that teachers who benefited from aide services increased the amount of time for student-teacher dialogue; nevertheless, little change was perceived in how teachers with aides asked questions, lectured, accepted feelings of students,

praised students, gave directions, allowed self-initiated student talk, or limited confusion.

Hiatt (1978) examined the impact upon individualization of instruction when teacher aides were placed in primary classrooms. She found that teachers spent more time on teaching activities that they valued ($p < .001$) and had a significantly higher level of job satisfaction ($p < .02$). Nonetheless, differences concerning individualization of instruction between classrooms with aides and without aides were few. They included classrooms with aides having a lower level of student task involvement and having assignments with more varying levels of difficulty. These differences might be more appropriately credited to the fact that the aide-assisted classrooms used programmed instructional materials. Maybe the materials and not the aides played more of a role in reducing task involvement. The classrooms were similar, however, in the frequency of teachers working with individuals and small groups, the variety of learning tasks, and the variety of sizes of instructional grouping.

The need for inservice preparation for aide adaptation into the classrooms. Obviously, the placement of teacher aides in a classroom does not automatically insure an improvement in teacher morale nor in pupil attitudes and achievement. Both Miller (1970) and Hiatt (1976) recognized that the inefficiencies of the teachers and aides in their studies might have been reduced if they had received

appropriate and sufficient inservice training. In fact, Miller acknowledged that teachers had only participated in part of a one-day service training program in the use of aides.

Willems and Willems (1973) contended that successful utilization of auxiliary personnel is dependent upon three considerations: (a) training paraprofessionals to perform specific tasks; (b) preparing teachers in organizing and utilizing paraprofessionals; and (c) selecting members of teacher-aide teams after considering not only academic and teaching qualifications but also after considering personalities and interpersonal relationships.

Each of the Willems and Willems' considerations have been given some attention in the four required workshops for new personnel in the PR Program. Each summer new PR teachers and aides have been expected to attend a week of summer staff development activities. Also, expected to participate in the week's activities have been the principals and the local reading coordinators. During the year these same people have been required to attend a minimum of three other staff development activities. The main purpose for all of these workshops has been to aid PR personnel in gaining understandings and skills which will contribute toward their helping children learn to read. With this in mind, the following topics have been included in some or all of the workshops:

1. Child Growth and Development
2. Approaches to Teaching Reading
3. Classroom Organization and Management
4. Materials Review
5. Basic Reading Skills/Competencies
6. Children's Literature
7. Reading in the Content Area
8. Development of a Comprehension Plan
9. Working as an Instructional Team (Principals, teachers, aides, volunteers, local coordinators, support personnel)
10. Evaluation (N. C. Department of Public Instruction, Division of Reading, 1979, p. 5)

Inservice training programs, like the one described above, cannot by themselves insure successful teacher-aide teams. The presence of aides in schools requires teachers to make personal and organizational changes. Teachers must assume broader leadership roles which require them to make and carry out professional decisions. In turn aides must assume many of the bureaucratic duties teachers have previously had to serve. Whether the aide is allowed into the professional area of instruction is dependent upon the aide's capabilities and the teacher's willingness to share. Those teachers who can create with their aides a symbiotic relationship aimed at enhancing the educational quality of the classroom will likely improve student attitudes and academic growth (Brubaker, 1976).

Direct Instruction and the Integrated Language Arts Program

In summary, interpretation of the literature on teacher effectiveness and the influence aides have on that

effectiveness should not necessarily encourage the belief that an increase in instructional time and the use of direct instruction denies the importance of an integrated curriculum. True, the evaluative instruments in most of the studies described in this chapter were skills oriented as are the achievement tests used in the Primary Reading Program. Obviously, teachers who spend a great deal of time converging on the specific skills often included in these tests may have students who obtain high test scores. Yet, the basic skills of communication are obtainable through a wide range of experiences involving the language arts and other subjects. This point was made quite clear by Bennett et al. (1976) in their description of the highly successful informal teacher who devoted a significantly large proportion of her time to direct instruction in an integrated language arts program. She demonstrated that direct instruction was not only effective in formal classrooms but also in more divergently oriented settings. In fact, the majority of studies concerning the relationships of listening, speaking, reading, and writing support the viewpoint that these skills are distinct but overlapping; therefore, their interrelationships justify the belief that instruction in one language skill will in some way influence the acquisition of another language skill (Anastasiow, N., 1971; Loban, 1963; Spearritt,

1962; Strickland, 1962; Tiedt, 1974; Wilkerson & Stratta, 1970).

This overlapping effect is reflected in the tendency to use the term oracy for listening and speaking. Each distinct skill or the combination of both is often ignored or superficially acknowledged in daily classroom curricula. Stewig (1974b) reported thet 45% of the students' school day is spent listening; yet, 52.9% of the teachers he surveyed reported providing very little direct instruction in listening. Nevertheless, Canfield (1961), Fawcett (1966), and Lundsteen (1966) showed that listening can be taught quite effectively through a program of direct instruction of specific listening skills.

Opportunities for providing oracy practice are often centered around show-and-tell sessions. The ascribed noble intention of these sharing sessions is to allow students to participate in an experience which will help them become good listeners, speakers, and thinkers. Bingham and Dusenbery (1979), however, maintained that during these sessions students often speak without purpose or conscious feelings of responsibility to their audience and listen only passively while their thoughts remain superficial. They suggested that the people who can change this ritual into a learning experience are the teachers. They need to provide direct lessons in organization of content, delivery techniques, and evaluation

and to become, themselves, model listeners, speakers, and probers.

Another aspect of instruction in oracy is creative dramatics. Middleton (Note 3) suggested that creative dramatics needs to be taught to children from ages 5 to 7 in 30-minute sessions held twice weekly and that older children need two weekly sessions lasting approximately 45 minutes each. Proponents of creative dramatics (Burger, 1950; Middleton, Note 3; Stewig, 1974b; Ward, 1957) have not only recommended it because of its therapeutic, aesthetic, and recreational qualities but, also, because it can be used to encourage cognitive growth. Creative dramatics has been linked to significant improvements in reading and vocabulary growth (Blank, 1954; Bordan, 1970, pp. 28-30; Creative Dramatics Spurs Verbal Development in Rhode Island, 1972). Slade (1955, p. 66) even suggested a developmental sequence of drama experiences from which he believed would come an improvement of language flow and writing ability. Finally, authorities (Durland, 1975; Fitzgerald, 1957; Siks, 1958) in the field of creative dramatics have placed a great deal of stress upon the importance of a developmental sequence of well-structured activities which are directed by strong democratic leaders. Stressed throughout the literature on creative dramatics is the requirement that student-teacher interaction be continuous in order for creativity to be productive.

While direct instruction in oracy will help refine and improve oral communication, neglect of it will not discourage people from speaking and listening. Yet, the skill of writing requires constant encouragement and direction since the complexity and abstractiveness of the process prevent it from coming naturally (Douglas, 1967; Vygotskii,1962). Nevertheless, this direction is often not being given. Graves (1978) reported that "of every two hours spent on teaching reading, only five minutes are spent on teaching writing " (p. 638). He submitted that writing has been limited to one-word responses on ditto paper. Although instruction and practice in correct usage, punctuation, capitalization, spelling, and penmanship are important, students also need to spend time in meaningful application of the whole process of writing. This does not necessarily mean that a student should write while isolated from the guidance of teachers. For example, both reading and writing are taught through frequent verbal interactions between teacher and students during the language experience approach. Moreover, sustained approaches to reading (Hunt, 1970; McCracken & McCracken, 1972) and writing (Allington, 1975; Cunningham, 1978) have required teachers to be actively involved through providing evaluative monitoring and feedback as well as having the teachers serve as model readers and writers.

Obviously, integrated language arts programs require the direct attention of teachers who can devote a maximum of time to the role of instructor. When clerical, monitorial, and maintenance roles are assigned to paraprofessionals, teachers are freed to spend more time in direct instruction. Whether or not the teachers of the Primary Reading Program are providing more direct instruction and a broader integration of language experiences is addressed in the remaining chapters. The following chapter describes the study procedures used in examining this program.

CHAPTER III

PROCEDURES OF THE STUDY

This chapter is devoted to describing the observation instrument and its use; providing demographic information pertaining to the geographic region from which the classrooms were drawn; describing the school systems, schools, classrooms, teachers, and aides used in the study; and describing how the data were collected and statistically analyzed. It concludes with a statement concerning the study's limitations.

Development and Description of Observation Instrument

Development of Observation Instrument

The observation instrument used in this study was developed to identify objectively specific teacher behaviors which were associated with effective teaching and which could possibly be affected by the presence of an aide. The selection of those behaviors which met these criteria was strongly influenced by three studies: (1) Miller's (1971) investigation of aide influence upon teacher use of time; (2) Durkin's (1978-1979) examination of comprehension instruction in the elementary school; and (3) the BTES (Fisher et al., 1978a). Perusal of other research

literature reaffirmed the findings of these studies and aided in refining the rationale for the selection and definition of each category on the instrument. (A complete rationale for this study and the categories in the observation instrument is discussed in Chapter I under the heading Rationale for the Study.) Finally, during classroom observations in the fall of 1979, the instrument was experimentally tested. Experiences during this testing aided in refining and rearranging items on the instrument in order to make coding easier and in selecting comfortable time intervals in between the codings and each observational segment.

Description of Observation Instrument

The instrument consists of one sheet of paper designed for coding both teacher and aide behavior for 15 minutes (see Appendix C for observation instrument included in the study proposal). Spaces are at the top of each sheet for the name of the teacher being observed, the actual class size at the time of the observation, and the observation date. A space is at the bottom of each sheet for the observer's signature. A circle in the upper left-hand corner is for entering the number of the 15-minute segment that that particular sheet represents. The study had four segments during each observation; therefore, four sheets were used. To the right of the coding grid is a blank space

for descriptive anecdotes and clarifications of the circumstances for each code marked in the grid.

The teacher section of the observation instrument is divided into rows representing categories and subcategories of teacher behaviors. The first three categories on the instrument are Noninstructional duties, Monitorial duties, and Instructional duties. Under Instructional duties are six subject areas: Reading, Oracy, Writing, Spelling, Handwriting, and Non-language arts. Teacher instructional behaviors--Teaching, Assessing, Assigning, and Helping with assignments--are listed under each of of the subject areas labeled as Other language arts--Oracy, Writing, Spelling, and Handwriting. The subject category Reading is more specifically subcategorized under the subheadings Word identification, Word meaning, Oral reading, Silent reading, Text comprehension, and Study skills. With the exceptions of Oral reading and Silent reading the teacher instructional behaviors of Teaching, Assessing, Assigning, and Helping with assignments are listed under each of these subcategories. The subject category Non-language arts is placed under Instructional duties in order to give the teacher credit for instructional involvement but is not subcategorized into instructional behaviors since it does not specifically relate to the main purpose of describing the language arts programs of PR and non-PR teachers. Finally, Uncodeable

activity is listed for use when the teacher's behavior is unobservable or is personal. Thus, all other categories reflect identifiable and professional behaviors.

The aide section of the observation instrument is divided into rows representing basic categories of aide behavior. It is not as detailed as the teacher section since a thorough description of both teachers and aides would require more than one observer and the major purpose of this study was to describe teacher behavior. The first three categories of aide behavior are the same as for the teacher behavior: Noninstructional duties, Monitorial duties, and Instructional duties. Under Instructional duties the instrument divides the subject areas into Reading, Other language arts, and Non-language arts. Finally, the category Uncodeable activity is listed for those aide behaviors that are unobservable or personal.

The means for coding teacher behavior are the same as for aide behavior. To the right of each category and subcategory are 15 numbered spaces for coding at completion of each minute for 15 minutes. When the behavior is noninstructional or uncodeable, that particular category is found and a check is placed in the square representing the completed minute in which the behavior occurred. Similarly, an I, S, or L is used if the teacher or aide's behavior is monitorial or instructional. I represents teacher or aide interaction with an individual student, S

represents teacher or aide interaction with a small group of students, and L represents teacher or aide interaction with a large group of students.

The process of coding instructional behaviors is slightly more complicated than for coding noninstructional or monitorial behaviors. For aides only the instructional subject areas are provided for coding; no instructional behaviors are listed. For teachers both the subject areas and the instructional behaviors are listed for coding. For example, when a teacher is giving a spelling test to the whole class, the coder must locate on the observation instrument the category and behavior of Spelling and Assessing and then mark an L in the square representing the completed minute in which the behavior occurred. By this means one mark can identify the time the behavior occurred, the subject area and instructional process involved, and the size of group with which interaction occurred.

Preparation of Observers in the Use of Observation Instrument

Observers

This investigator along with two assistants gathered the data analyzed in this study. All three coders had taught primary children, had or were completing graduate degrees with specialization in reading education, and had varying amounts of experience working with teacher aides.

Training in the Use of the Instrument

Prior to testing the reliability of the instrument each of the two assistants received a copy of the study's rationale and definition of terms. The observational process, terms, and rationale were discussed with each assistant separately and together prior to practicing the use of the instrument in a classroom.

The first training session using the instrument occurred in a non-PR classroom. The training procedures consisted of each of the three separately coding the teacher's behavior for 15 minutes and leaving the room to discuss and compare how each had perceived and coded what had occurred. After the first practice session, coder reliability agreement was 70%. Five days later the same procedures were repeated in a PR classroom. This time the three coders had 63.4% agreement concerning the coding of teacher behavior and 78.4% agreement concerning the coding aide behavior.

Because of scheduling conflicts the next two practice sessions were spent separately with each assistant. The training session with Assistant A was in a PR classroom and resulted in 80% coder agreement concerning teacher behavior and 100% agreement concerning aide behavior. The training session with Assistant B was in a non-PR classroom and concluded with 90% coder agreement of teacher behavior

Finally, all three observers were reunited to test coding agreement and the instrument's reliability. The final testing sessions were conducted in a PR classroom. At the completion of the first 90-minute observation session all three coders had 95% agreement concerning teacher behavior and 100% agreement concerning aide behavior. The second day's results were reversed. Coders agreed 100% on teacher behavior and 95% on aide behavior.

To insure that each coder would continue to maintain a high degree of agreement and consistency with the others, each assistant was contacted weekly by this investigator in order to discuss any problems or unusual circumstances which had arisen during the observation sessions. Moreover, this investigator continuously read the descriptions which accompanied the codings in order to identify any inconsistency among the three coders. Whenever any inconsistency was identified the responsible coder was notified and the problem was rectified.

Procedures for Obtaining Permission to Observe within School Systems, Schools, and Classrooms

Permission from School Systems

School systems were initially contacted by telephone in order to ascertain whether they had any interest in participating in the study. Those school systems expressing interest were sent or taken a copy of the study

proposal which included a description of the study, the proposed observation instrument, a statement of the ethical principles followed by the study, a statement of the anticipated value of the study, and samples of the preliminary forms to be completed by the participants (see Appendixes B and C for sample introductory letter and study proposal). All school systems were assured that their teachers and aides would not be compared among them because the limited number of classrooms used from each system was a sample much too small for comparisons and because comparisons of school systems did not meet the study's purpose. Nevertheless, all were promised a copy of the final cumulative results of the study in order to help them evaluate their own primary programs according to the conclusions of the study.

Of the six school systems that chose to participate, four had central office administrators to identify and make the initial contact with the principals of schools that they felt qualified for this study. The other two school systems provided lists of their elementary schools and permission for this investigator to contact the principals of these schools so that the study could be explained before permission was requested for conducting observations.

Permission from Schools

This investigator discussed the study with each principal. The need for each school to provide paired PR and non-PR self-contained classrooms on the same grade level was explained. Principals were asked to select teachers who had at least one year's teaching experience and whom they considered above average in ability. (The subjective description above average was used to discourage principals from purposely suggesting weak teachers in order to bias, as they saw fit, the study in favor or disfavor of the Primary Reading Program. Moreover, it enabled this investigator to reassure teachers that they had been suggested because of the favorable opinion their principal had of them.) Following the introductory interview each principal arranged a meeting with the teachers and aides who they felt met the study's qualifications.

Permission from Teachers and Aides

During the briefing of teachers and aides, they were told that this was a comparative study of the performances of teachers with aides and teachers without aides; that non-PR teachers would serve as the control group and provide a reference point for the study's conclusion; and that although teacher behaviors were the primary concern of the study, aide behaviors would also be monitored. No specific behaviors listed on the observation instrument

were described. Teachers and aides in each school were promised a debriefing session in April and May of 1980,* when they would be allowed to examine the data concerning each of them and to compare these data with the study's findings. Both teachers and aides were assured that their anonymity would be maintained and were asked to sign a consent form formally stating that they had been informed of their rights as participants in the study (see Appendix C for consent form).

Once the teachers and aides had agreed to participate, observation dates were selected in order to avoid those mornings when special music, art, library, or physical education classes interrupted the students' regular language arts program. This was often difficult since observations were conducted two school days in succession. Once or twice teachers switched library or music times in order to have two successive uninterrupted mornings.

In preparation for the visits teachers were asked to explain to the students that an observer would be in the room for two mornings and to go about their work as usual. They were asked to place a chair for the observer near the teaching station most frequently used during the mornings. Finally, a form for teachers and a form for aides requesting background

*Because of unforeseeable circumstances, debriefing actually took place during May and June of 1980.

information were distributed. These forms were to be completed and presented to the observer prior to the first observation in each class (see Appendix C).

Demographic Information of Geographic Area of Schools in Study

The study was conducted in the central Piedmont section of North Carolina. It involved schools located in four counties, a territory covering approximately 5% of the state's acreage (N. C. Department of Administration, 1979) and approximately 10.5% of the state's 1980 population (U. S. Bureau of the Census, Note 4). In 1977, the United States Bureau of the Census reported that the average per capita income of this area was $5,352.25 as compared to the state's per capita income of $4,876 and the nation's per capita income of $5,751 (see Table A in Appendix D for census information on area). According to a 1979 publication by the North Carolina Research and Planning Services, employment in this area is mostly in manufacturing, wholesale and retail trade, and service industries. Area manufacturers produce mostly textile mill products, apparel and other finished goods, furniture and fixtures, and electrical machinery, equipment, and supplies. Actually, in 1972, of the state's 1,753,246 employees working in manufacturing, 17% lived in these four counties (see Table B in Appendix D for complete breakdown of industrial employment in state and in the counties in this study). Despite this area's high density of factory

employees, it still has a slightly higher unemployment rate than the state's average. However, according to 1976 data only one of the four counties had a rate of unemployment higher than the state's rate (see Table C, Appendix D, for unemployment rates).

Description of School Population

School Systems

Six school systems furnished schools for the study. Four school systems serve town or city districts, and two school systems serve rural and small communities. The most striking difference among the six is their nonwhite-white ratios (N. C. Department of Public Education, 1980). Yet, during the 1979-1980 school year the average total nonwhite-white ratio for all six school systems was comparable to the state's ratio as shown in Table D in Appendix E.

The results from the 1978-1979 state testing program showed that scores from these school systems were fairly comparable to each other. The Prescriptive Reading Inventory was administered to first and second graders throughout the state. For these six school systems, the average first grader's grade equivalency scores in reading were the same as or as much as 4 months above the national average first grader's scores, and the average second grader's grade equivalency scores in reading were from 1 to 6 months above the national average second grader's scores (N. C. Department

of Public Instruction, Division of Research, 1979b). The weakest area for the systems' first-grade students was comprehension while for second-grade students the strengths and weaknesses were fairly equal in distribution with only slightly more weakness in literal comprehension and logical thinking (see Tables E and F in Appendix F).

Third graders in the state were administered the California Achievement Tests. The average 1978-1979 third grader in this study's six school systems scored from 2 months below to 6 months above the average national grade equivalent total reading score, from 1 month below to 1 year, 2 months above the average national grade equivalent total spelling score, and from 1 month below to 8 months above the average national grade equivalent total language score (N. C. Department of Public Instruction, Division of Research, 1979b). The weakest area in reading was in vocabulary and the weaker area in language was in expression (see Table G in Appendix F). Although the average scores for each school system were generally near the state average, one needs to note that overall one of these school systems posted some of the highest scores in the state.

Schools

Classrooms from 14 schools were observed (see Table 1). These schools had a variety of grade ranges. The number of teachers serving each school ranged from 18 to 38 with a mean number of 26.7 teachers at each school (N. C. Department of

Public Instruction, Division of Information and Publication, 1979). According to the principals of the smallest and largest schools in the study, the school enrollment at the time of the study was 409 and 718 students, respectively.

Classrooms

Data were gathered from 40 self-contained classrooms of which 20 were PR classrooms and 20 were not. Overall, observations were made in 3 first-grade PR classrooms and 3 first-grade non-PR classrooms, in 5 second-grade PR classrooms and 5 second-grade non-PR classrooms, and 12 third-grade PR classrooms and 12 third-grade non-PR classrooms. At the time the observations were made the Primary Reading Program was in its fifth year and would be implemented in almost all classrooms statewide during the next school year. Many principals had chosen to make first- and second-grade classrooms Primary Reading classrooms before they entered their third-grade classrooms into the program. Therefore, the study had a disproportionate number of first-, second-, and third-grade classrooms because more third-grade non-PR classrooms were available for the control (see Table 1).

The students' SES backgrounds were obtained by having teachers provide an overall rating of their classes. No teacher gave his or her classroom a high SES rating although some classrooms were rated as having students with a mixture

Table 1

Description of Schools from Which Classrooms Were Drawn

School System and School	School Grades	No. of Teachers	PR Classrooms Observed Grades 1	2	3	Non-PR Classrooms Observed Grades 1	2	3
School System A								
School 1	K-5	28		1	1		1	1
School 2	K-5	27			3			3
School System B								
School 1	3-6	26			1			1
School 2	3-6	32			2			2
School System C								
School 1	K-6	26			1			1
School 2	K-6	26	1			1		
School 3	K-6	26		1			1	
School System D								
School 1	K-5	22			1			1
School System E								
School 1	K-5	26		1			1	
School 2	K-6	18	1			1		
School 3	K-5	25		1			1	
School 4	K-5	25		1			1	
School System F								
School 1	K-4	38			3			3
School 2	K-3	29	1		1	1		1
			3	5	12	3	5	12

Note. Data in columns 2 and 3 from North Carolina Department of Public Instruction, Division of Information and Publications, 1979.

of SES backgrounds. Nevertheless, most classrooms in the study were rated as having students with low to middle SES backgrounds (see Table 2).

According to the forms completed by the teachers in the study, all used the basal reader approach to reading although they used different supplementary approaches (see Table 2). Teachers in only a few PR classrooms reported having more reading groups than did non-PR teachers. In both PR and non-PR classrooms throughout one school system the Psychotechnics program was used approximately 15 minutes each morning, and in one school the two PR and two non-PR classrooms used the Anne Adams' Success Program during the mornings and the basal reader approach during the afternoons. Two second-grade classrooms in one school spent ten minutes each morning in Uninterrupted Sustained Silent Reading (USSR). Moreover, five PR teachers and three non-PR teachers reported that they used the center approach to supplement their reading and language arts instruction. Two PR and non-PR teachers reported using the language experience approach. SRA kits were used by three non-PR and two PR teachers. Only one teacher, a PR teacher, reported that she wrote individual prescriptions for her students to complete while she worked with small groups. Despite these programs descriptions what was mostly observed in all classrooms was teachers working in small groups using basal readers, worksheets, and workbooks. Other

Table 2

Description of Paired PR and Non-PR Classrooms

PR Classroom	Grade	SES Rating	Class Enrollment	Class Size on Day of Observation		Reading Approaches[a]						
				Day 1	Day 2	Number of Reading Groups	Basals	Language Experience	USSR	Psychotechnics	Anne Adams' Prog	Centers	Prescriptions	SRA Kit
1	2	Low	24	21	21	3	✓	✓		✓	✓			
2	3	Low	24	23	23	5	✓✓			✓				
3	3	Mid	26	23	25	5	✓			✓				
4	3	Mid	27	26	26	3	✓			✓				✓
5	3	Mix	26	26	26	5	✓							
6	1	Mix	26	24	26	5	✓	✓						
7	3	Mix	24	24	24	4	✓							✓
8	3	Mix	23	19	19	3	✓✓				✓	✓		
9	3	Low	22	22	22	4	✓✓				✓			
10	3	Low	20	20	20	3	✓✓				✓			
11	2	Low-mid	26	25	25	4	✓							
12	2	Mid	24	23	24	4	✓✓							✓
13	1	Mid	27	22	23	5	✓							
14	2	Low	25	25	24	5	✓					✓		
15	3	Low-mid	25	25	21	3	✓							
16	3	Low-mid	25	19	24	3	✓							
17	3	Low-mid	25	23	25	3	✓							
18	3	Mid	26	24	26	3	✓							
19	3	Mid	27	25	26	4	✓							
20	3	Mix	25	22	24	4	✓							

Table 2 (continued)

Non-PR Classroom	Grade	SES Rating	Class Enrollment	Class Size on Day of Observation		Reading Approaches						
				Day 1	Day 2	No. of Reading Groups Basals	Language Experience	USSR	Psychotechnics	Anne Adams' Prog.	Centers	Prescriptions SRA Kit
1	2	Mid	25	23	23	3✓		✓	✓			✓
2	3	Low-mid	24	25	20	3✓			✓			
3	3	Mid	26	24	22	3✓			✓			
4	3	Mid	26	25	25	3✓			✓			
5	3	Low-mid	25	24	24	5✓						
6	1	Mid	26	23	23	6✓				✓		✓
7	3	Mix	24	22	23	5✓	✓			✓		✓
8	3	Mix	23	22	22	3✓	✓			✓		
9	3	Mix	22	18	22	4✓			✓			
10	3	Low	20	20	20	4✓			✓			
11	2	Low	25	20	21	7✓						✓
12	2	Low-mid	25	24	24	4✓						
13	1	Mid	28	28	26	5✓						✓
14	2	Low	23	21	21	4✓						
15	3	Mid	25	24	24	4✓				✓		
16	3	Mid	25	24	24	3✓				✓		
17	3	Low-mid	26	26	24	3✓						
18	3	Mix	26	22	24	4✓						
19	1	Mid	27	23	24	4✓						
20	3	Mix	25	22	23	5✓						

[a]See Appendix G for more information concerning specific approaches.

language lessons concerning handwriting, spelling, and language usage were frequently presented to large groups using boardwork or textbooks. (See Appendix G for further information on specific tests and materials used in the classrooms.)

Descriptions of Teachers and Aides in the Study

Teachers

Information gathered from preliminary forms completed by teachers and aides provided experiential profiles for both (see Table 3). All teachers in the study had at least an undergraduate degree in education. Furthermore, three PR teachers and two non-PR teachers had graduate degrees in education. PR teachers had from 4 to 31 years teaching experience with a mean of 14.6 years, and non-PR teachers had taught from 1 to 24 years with a mean of 10.975 years of teaching. Since observations began in January, all teachers seemed to have settled into a stable routine for conducting their classrooms.

Although teachers were not queried about their opinions of the Primary Reading Program in general and aides in particular, opinions were given. Two non-PR teachers volunteered statements of concern for the following year when they, too, would have to have aides assisting them in their classrooms. One of the PR teachers (deemed by her observer

Table 3

Experience of Non-PR Teachers, PR Teachers, and Aides

Non-PR Teachers	No. of Years of Teaching Experience	PR Teachers	No. of Years of Teaching Experience	No. of Years in PRP	No. of PR Workshops attended	Was Workshop Helpful?	Aides	No. of Years of Aideing Experience	No. of PR Workshops attended	Was Workshops Helpful?
1	25	1	20	1	1	Somewhat	1	0	1	No
2	11	2	24	2	1	Yes	2	1	5	Yes
3	12	3	11	4	10	Somewhat	3	0	6	Yes
4	24	4	28	2	3	Yes	4	0	1	Yes
5	7	5	13	2	6	Yes	5	5	5	Yes
6	14	6	7	4	8	Yes	6	2	1	Yes
7	6	7	8	2	10	Yes	7	2	5	Yes
8	5	8	11	3	3	Somewhat	8	2	1	Yes
9	22	9	4	1	1	Yes	9	4	2	Yes
10	8	10	14	2	2	Yes	10	7	1	Yes
11	2.5	11	29	0	0	---	11	2	3	Somewhat
12	9	12	17	3	4	Yes	12	0	0	---
13	13	13	10	3	6	Yes	13	.3	0	---
14	8	14	10	3	3	No	14	1	2	Somewhat
15	14	15	7	2	2	Somewhat	15	1	2	Yes
16	14	16	27	3	3	Yes	16	2	0	Yes
17	7	17	6	4	12	Somewhat	17	4	12	Somewhat
18	3	18	31	2	3	Yes	18	3	3	Yes
19	1	19	3	2	2	Yes	19	0	0	---
20	14	20	12	3	2	Yes	20	4	2	Yes
Total average	10.975		14.6	2.4	4			1.6	3	

as being quite capable) spoke of prior unsatisfactory experiences with aides who lacked initiative and prevented her from accomplishing all that she could have accomplished if she had not been bothered with their presence. The other teacher had had no direct experience with an aide but recalled aide ineptitudes described by her colleagues who had aides. Other non-PR teachers expressed hopeful anticipation toward the prospect of having aide assistance in the coming year. No PR teacher volunteered any statement of dissatisfaction with aides although one teacher reported she limited the services her aide performed implying that her aide's skills were limited.

This study was conducted during the fifth year of gradual implementation of the Primary Reading Program. At the beginning of the school year the PR teachers in the study had been in the program from 0 to 4 years with the average involvement being 2.45 years. They reported attending from 0 to 12 PR inservice workshops (some of which lasted a week) with a mean of 4 workshops each. Of those attending these workshops, 12 teachers found them helpful, 6 teachers found them somewhat helpful and 1 teacher found them not helpful in generating new ideas. Less satisfied teachers reported that the workshops were repetitious and that the ideas presented during them were too impractical or lacked specificity. Both satisfied and dissatisfied teachers suggested that future workshops needed to deal with

classroom management, how to work with aides, and ideas for motivating and teaching slow and gifted students.

Aides

All aides in the study had a high school degree; five had undergraduate degrees in fields such as home economics, French, and teaching; and two had associate degrees in education. Their experience in aideing ranged from 0 to 7 years with a mean of 1.6 years experience. All aides reported that they provided instructional services as well as clerical and monitorial services. All but three had attended PR inservice workshops with an average of three workshops each. (Again, most of these workshops were the same week-long workshops PR teachers attended.) Of those attending, 14 aides rated them as being helpful and 4 rated them as being somewhat helpful. What aides listed as of most help was the introductions to the textbooks their students used and the many new ideas they gathered at the workshops. Topics which they wanted covered at future workshops were more teaching ideas and help with discipline.

Study Procedures

The collection of observable data took approximately four months, lasting from the latter part of January until the middle of May, 1980. More than 80 observations

were made since some had to be excluded because of the following conformity restrictions placed on the study: (1) each observer had to observe an equal number of PR and non-PR classrooms; (2) both PR and non-PR classrooms were observed equally according to the day of the week; and (3) both PR and non-PR classrooms were observed in units of two successive days. Although the latter restriction allowed for continuity and limited the likelihood of observing a teacher on an atypical day, it was troublesome. Occasionally, an observer observed in a classroom one day and was not able to observe in the same classroom the next day because of a teacher or aide illness or because of snow. In either case the first day's observational data were discarded and two other successive days were rescheduled. These same restrictions and inconveniences coupled with school schedules made Fridays difficult for scheduling; therefore, only four observations were made on Fridays; however, they were equally distributed between PR and non-PR classrooms (see Table 4).

Although observations were supposed to begin with the opening of the school day, it became evident quite early in the study that teachers had consistently reported that their school day began 15 minutes after it actually did begin. Therefore, the remaining observations also had to follow this time schedule thus preventing the capturing of observable data which reflected whether an aide hastened

Table 4

Observation Schedule

Observer	Date	Weekdays and Kinds of Classrooms Observed				
		M	T	W	T	F
A	Jan. 23 & 24			Non-PR	Non-PR	
B	Jan. 28 & 29	PR	PR			
C	Feb. 4 & 5	Non-PR	Non-PR			
A	Feb. 13 & 14			PR	PR	
C	Feb. 13 & 14			PR	PR	
A	Feb. 15 & 19	Non-PR				Non-PR
B	Feb. 18 & 19	Non-PR	Non-PR			
C	Feb. 18 & 19	PR	PR			
A	Feb. 19 & 20		Non-PR	Non-PR		
B	Feb. 20 & 21			Non-PR	Non-PR	
A	Feb. 21 & 22				PR	PR
A	Feb. 25 & 26	PR	PR			
A	Feb. 27 & 28			Non-PR	Non-PR	
B	Mar. 5 & 6			PR	PR	
C	Mar. 5 & 6			PR	PR	
A	Mar. 6 & 7				Non-PR	Non-PR
A	Mar. 10 & 11	Non-PR	Non-PR			
B	Mar. 10 & 11	PR	PR			
C	Mar. 10 & 11	Non-PR	Non-PR			
B	Mar. 12 & 13			PR	PR	
C	Mar. 12 & 13			PR	PR	
A	Mar. 17 & 18	PR	PR			
B	Mar. 17 & 18	PR	PR			
A	Mar. 19 & 20			PR	PR	
B	Mar. 19 & 20			Non-PR	Non-PR	
C	Mar. 19 & 20			Non-PR	Non-PR	
A	Mar. 31 & Apr. 1	PR	PR			
B	Mar. 31 & Apr. 1	Non-PR	Non-PR			
C	Mar. 31 & Apr. 1	Non-PR	Non-PR			
A	Apr. 2 & 3			Non-PR	Non-PR	
B	Apr. 2 & 3			Non-PR	Non-PR	
A	Apr. 8 & 9		PR	PR		
C	Apr. 9 & 10			PR	PR	
A	Apr. 14 & 15	PR	PR			
C	Apr. 14 & 15	Non-PR	Non-PR			
C	Apr. 18 & 21	PR				PR
A	Apr. 21 & 22	Non-PR	Non-PR			
C	Apr. 30 & May 1			Non-PR	Non-PR	
A	May 6 & 7	Non-PR	Non-PR			
A	May 13 & 14	PR	PR			

the beginning of an academic day by completing routine clerical duties associated with most school mornings.

Each observation lasted 90 minutes. Teacher and aide performances were coded according to the specified categories discussed earlier. The first coding of an aide's performance was made following the first 30 seconds of observation. The remaining codings followed in 60-second intervals. The first coding of a teacher's performance was made following the first 60 seconds of observation and continued in 60-second intervals. Hence, in PR classrooms coding alternated every 30 seconds from teacher performance to aide performance. Since teachers and aides often switched roles and activities during the 60-second intervals, it became necessary to code only the behaviors which were occurring within the 15-second periods prior to the minute or half-minute coding times. Circumstances surrounding borderline judgments of what actually was occurring at the time of coding were explained in the space to the right of the coding column. Fifteen-minute coding segments alternated with 10-minute segments for writing and clarifications until the total 90-minute observation period was consumed. At the conclusion of one observation period in a non-PR classroom, the teacher's behavior had been coded 60 times, and in a PR classroom the teacher and aide's behaviors had been coded 60 times each.

Coding in a non-PR classroom was not always less hectic than in PR classrooms. Both PR and non-PR teachers received

assistance from volunteers, and these teachers did not want this study to interfere with their having volunteers work in the rooms. Therefore, whenever volunteers worked in the classrooms during observations, their behaviors were coded as if they were aides. Their contributions to the class were later analyzed and recoded separately in this study. Furthermore, one PR teacher was not only assisted by a paid aide but also had the help of an aide who was completing her associate degree internship. Again, the performances of both aides were coded and the contributions of the interning aide was analyzed and recorded separately in this study. Such conflicts seemed unavoidable and reflected circumstances which are often repeated across the state and nation. Moreover, they permitted the observer to examine and compare the effect aides and volunteers had upon a teacher's performance.

Statistical Procedures

To determine whether PR teachers behaved significantly differently from non-PR teachers, two-sample t tests were applied to the mean proportions of occurrences of each behavior category. Variances were stabilized through the use of the arcsin transformation. Through these procedures the following six major null hypotheses were tested at the 5% level of significance, $p < .05$:

1. No significant differences exist between teachers with and without aides in the utilization of time.

2. No significant differences exist between teachers with and without aides in the proportion of teacher instructional time spent on reading, oracy, writing, spelling, and handwriting.

3. No significant differences exist between teachers with and without aides in the proportion of reading instructional time spent on word identification, word meaning, oral reading, silent reading, text comprehension, and study skills.

4. No significant differences exist between teachers with and without aides in the proportion of language arts instructional time spent teaching, assessing, assigning, and helping with assignments.

5. No significant differences exist between teachers with and without aides in the proportion of time spent in direct involvement with individual students, small groups of students, and large groups of students.

6. No significant differences exist between classrooms which have teachers with aides and classrooms which have teachers without aides in the total amount of human resource time given to individual students, small groups of students, and large groups of students.

The first five hypotheses concern only teacher behavior. Hypothesis 6 concerns combined services of teachers and aides. To test it, a t test was applied to determine the significance of difference between PR and non-PR classrooms in the

total amount of combined human resource time given to individuals, small groups, and large groups. Lastly, for discussion purposes the percentage of time spent in each aide category was figured in order to show how aides and volunteers spent their time during the language arts period.

Limitations of the Study

This study is limited by its sample of classrooms and the amount of time spent in observation. The sample was not randomly drawn and was located in one geographic region within North Carolina, and because of this, it may not be a representative sample. The selection procedures and the geographic location were direct results of limited funds and personnel and the difficulty in obtaining permission to observe in schools. Yet, efforts were made to maintain homogeneity with respect to classroom procedures and demographic factors. A variety of teaching approaches were observed, and proportionately,they did not run counter with what is generally believed to be prevalent among most schools. For example, all classrooms used basal readers as their major approach to reading while a few teachers supplemented this approach with phonics programs, language experience activities, and learning centers. Although the geographic region is atypical of the state because of its population density, commonality with the state was obtained by using school systems with a variety of racial ratios which reflect the

varying differences in such ratios across the state. Only future research in dissimilar regions and schools can confer or refute what was learned in this geographic area.

Difficulty in finding first- and second-grade classrooms for the control group resulted in having to use a disproportionate number of third-grade classrooms; therefore, a lopsided view of primary level language arts progress was obtained. A better study would have included only third-grade classrooms in order to have dealt specifically with the varying aspects of instruction on this one level.

Furthermore, while the instructional behavior subcategorized as teaching was supposed to represent the essence of effective instruction, it did not. The observers were often disturbed that when they marked a teacher's behavior as teaching, it did not signify the qualities of organization, clarity, enthusiasm, and accuracy of that behavior. Exclusion of these high inference judgments might have been less bothersome if student engagement rates had been tallied along with the coding of teacher and aide behavior.

The amount of time spent in coding teacher and aide behaviors was 4,800 minutes. It was limited to alternating time segments within a 90-minute period of morning classes. While this time is generally known to be most frequently spent in language arts instruction, this investigator concedes that in truly integrated curricula, language arts

is taught throughout the day. Moreover, in including only this 90-minute period, this investigator may have excluded the more creative and divergent utilization of language skills sometimes exhibited and practiced during lessons in social studies, science, music, and art.

Lastly, when coding the behaviors of many different teachers and aides over a long period of time the possibility of inaccuracy and inconsistency in categorizing does exist. Moreover, when three coders attempt to use the same system for coding, the opportunity for inconsistency is probably tripled. Although this limitation is inherent to this type of study, all efforts were made to reduce the extent that it occurred.

Consideration of the above limitations needs to be made as one examines this study's findings which are presented in the following chapter. Despite the study's limitations interesting comparisons were found which reflect significant differences which can have and may be having marked effects upon the students in the classrooms which were observed.

CHAPTER IV

RESULTS OF THE STUDY

This study tested six null hypotheses in order to answer two basic questions: (1) Do PR teachers who have aides perform differently from non-PR teachers who do not have aides? (2) In what ways and how much do auxiliary personnel contribute to a classroom? The first question was answered through testing the components of five major null hypotheses. The second question was answered partly through testing the components of the sixth major null hypothesis and partly through an examination of the percentages and amounts of time auxiliary personnel spent performing various services. All significance testing was done using the two-sample t test with the acceptable statistical significance at the level of $p < .05$ for all comparisons. The results of these statistical analyses are presented and discussed in this chapter.

Results of Comparisons of Performances of Teachers with and without Aides

Hypothesis 1

This hypothesis states that no significant differences exist between teachers with and without aides in the utilization of time. It was rejected because two of its three subhypotheses were rejected. The statistical results for each are given in Table 5.

Table 5

Comparison of Utilization for Time for Teachers with and Without Aides

Group[a]	Duty	Mean[b]	SD	t value[c]	p
Teachers					
With Aides	Noninstructional	.079	.038	.9264	.3601
Without Aides		.096	.061		
Teachers					
With Aides	Monitorial	.162	.070	2.6854	.0107*
Without Aides		.221	.071		
Teachers					
With Aides	Instructional	.756	.100	-2.7928	.0081**
Without Aids		.674	.092		
Teachers					
With Aides	Uncodeable	.003	.007	.8380	.4068
Without Aides		.009	.021		

[a] n = 20 for each group

[b] Mean proportion of time spent on each duty

[c] df = .38

*p < .02

**p < .01

Subhypothesis a. The hypothesis that no significant difference exists between the two in the proportion of time spent performing noninstructional duties was accepted, t (38) = .9264, $p > .05$.

Subhypothesis b. The hypothesis that no significant difference exists between the two in the proportion of time spent performing monitorial duties was rejected, t (38) = 2.6854, $p < .02$.

Subhypothesis c. The hypothesis that no significant difference exists between the two in the proportion of time spent performing instructional duties was rejected, t (38) = -2.7928, $p < .01$.

Hypothesis 2

This hypothesis states that no significant differences exist between teachers with and without aides in the proportion of teacher instructional time spent on reading, oracy, writing, spelling, and handwriting. It was accepted because all five of its subhypotheses were accepted. The statistical results for each are presented in Table 6.

Subhypothesis a. The hypothesis that no significant difference exists between the two in the proportion of instructional time spent on reading was accepted, t (38) = -1.0600, $p > .05$.

Subhypothesis b. The hypothesis that no significant difference exists between the two in the proportion of

Table 6

Comparison of Instructional Time Spent on Subject Areas for Teachers with and Without Aides

Group[a]	Subject Area	Mean[b]	SD	t value[c]	p
Teachers With Aides	Reading	.478	.180	-1.0600	.2958
Teachers Without Aides		.418	.184		
Teachers With Aides	Oracy	.055	.067	-.2049	.8387
Teachers Without Aides		.051	.066		
Teachers With Aides	Writing	.098	.100	-.5449	.5890
Teachers Without Aides		.084	.095		
Teachers With Aides	Spelling	.085	.066	-.2041	.8394
Teachers Without Aides		.082	.101		
Teachers With Aides	Handwriting	.018	.030	.0531	.9579
Teachers Without Aides		.020	.034		
Teachers With Aides	Non-language Arts	.021	.040	.0931	.9277
Teachers Without Aides		.019	.023		

[a] n = 20 for each group

[b] Mean proportion of time spent on each subject area

[c] df = 38

instructional time spent on oracy was accepted, t (38) = -.2049, $p > .05$.

Subhypothesis c. The hypothesis that no significant difference exists between the two in the proportion of instructional time spent on writing was accepted, t (38) = -.5449, $p > .05$.

Subhypothesis d. The hypothesis that no significant difference exists between the two in the proportion of instructional time spent on spelling was accepted, t (38) = -.2041, $p > .05$.

Subhypothesis e. The hypothesis that no significant difference exists between the two in the proportion of instructional time spent on handwriting was accepted, t (38) = .0531, $p > .05$.

(Just as no significant differences were found between teachers with and without aides in the proportion of time spent on the various language arts, no difference was found in the amount of time spent on the non-language arts, t (38) = .0913, $p > .05$.)

Hypothesis 3

This hypothesis states that no significant differences exist between teachers with and without aides in the proportion of reading instructional time spent on word identification, word meaning, oral reading, silent reading, text comprehension, and study skills. It was accepted because all six of its subhypotheses were accepted (see Table 7).

Table 7

Comparison of Instructional Time Spent on Reading Skills for Teachers with and Without Aides

Group[a]	Reading Skill	Mean[b]	SD	t value[c]	p
Teachers With Aides	Word Identification	.123	.078	-.0325	.9743
Teachers Without Aides		.123	.070		
Teachers With Aides	Word Meaning	.068	.048	-1.3071	.1990
Teachers Without Aides		.044	.032		
Teachers With Aides	Oral Reading	.063	.069	.4580	.6495
Teachers Without Aides		.083	.099		
Teachers With Aides	Silent Reading	.048	.081	-.8673	.3912
Teachers Without Aides		.038	.068		
Teachers With Aides	Text Comprehension	.148	.069	-1.4558	.1537
Teachers Without Aides		.115	.175		
Teachers With Aides	Study Skills	.029	.044	-1.3480	.1856
Teachers Without Aides		.016	.033		

[a] n = 20 for each group [b] Mean proportion of time spent on reading skills

[c] df = .38

Subhypotheses a. The hypothesis that no significant difference exists between the two in the proportion of instructional time spent on word identification was accepted, t (38) = -.0325, p > .05.

Subhypothesis b. The hypothesis that no significant difference exists between the two in the proportion of instructional time spent on word meaning was accepted, t (38) = -1.3071, p > .05.

Subhypothesis c. The hypothesis that no significant difference exists between the two in the proportion of instructional time spent on oral reading was accepted, t (38) = .4580, p > .05.

Subhypothesis d. The hypothesis that no significant difference exists between the two in the proportion of instructional time spent on word meaning was accepted, t (38) = -.8673, p > .05.

Subhypothesis e. The hypothesis that no significant difference exists between the two in the proportion of instructional time spent on text comprehension was accepted, t (38) = -1.4558, p > .05

Subhypothesis f. The hypothesis that no significant difference exists between the two in the proportion of instructional time spent on study skills was accepted, t (38) = -1.3480, p > .05.

Hypothesis 4

This hypothesis states that no significant differences exist between teachers with and without aides in the proportion of language arts instructional time spent teaching, assessing, assigning, and helping with assignments. It was rejected because a significant difference was discovered for one of its four subhypotheses (see Table 8).

Subhypothesis a. The hypothesis that no significant difference exists between the two in the proportion of time spent teaching was accepted whether or not oral and silent reading time was included with teaching time, t (38) = -1.533, $p > .05$ and t (38) = -2.0028, $p > .05$, respectively.

Subhypothesis b The hypothesis that no significant difference exists between the two in the proportion of time spent assessing was accepted, t (38) = -.429, $p > .05$.

Subhypothesis c The hypothesis that no significant difference exists between the two in the proportion of the time spent assigning was accepted, t (38) = -1.1151, $p > .05$.

Subhypothesis d. The hypothesis that no significant difference exists between the two in the proportion of time spent helping with assignment was rejected, t (38) = 2.3881, $p < .03$.

Hypothesis 5

The hypothesis states that no significant differences exist between teachers with and without aides in the

Table 8

Comparison of Instructional Time Spent Teaching, Assessing, Assigning, and Helping with Assignments for Teachers with and Without Aides

Group[a]	Instructional Behavior	Mean[b]	SD	t value[c]	p
Teachers With Aides	Teaching (Not Including Oral and Silent Reading)	.435	.135	-2.0028	.0524*
Teachers Without Aides		.359	.096		
Teachers With Aides	Teaching (Including Oral and Silent Reading)	.546	.124	-1.533	.1335
Teachers Without Aides		.480	.145		
Teachers With Aides	Assessing	.101	.058	-.429	.6703
Teachers Without Aides		.098	.073		
Teachers With Aides	Assigning	.085	.044	-1.1151	.2718
Teachers Without Aides		.068	.041		
Teachers With Aides	Helping with Assignments	.003	.004	2.3881	.0220**
Teachers Without Aides		.010	.011		

[a] n = 20 for each group

[b] Mean proportion of time spent involved in instructional behaviors.

[c] df = 38 *p < .06 **p < .03

proportion of time spent in direct involvement with individual students, small groups of students and large groups of students. It was accepted because significant differences were not found in any of the three subhypotheses (see Table 9).

Subhypothesis a. The hypothesis that no significant difference exists between the two in the proportion of time spent in direct involvement with individual students was accepted, t (38) = -.5024, $p > .05$.

Subhypothesis b. The hypothesis that no significant difference exists between the two in the proportion of time spent in direct involvement with small groups of students was accepted, t (38) = -.0514, $p > .05$.

Subhypothesis c. The hypothesis that no significant difference exists between the two in the proportion of time spent in direct involvement with large groups of students was accepted, t (38) = .1404, $p > .05$.

Results of Comparisons of Amounts of Human Resource Time Provided to Different Size Groups in Classrooms with and Without Aides

Hypothesis 6

This hypothesis states that no significant differences exist between classrooms which have teachers with aides and classrooms which have teachers without aides in the total amount of human resource time given to individual students,

Table 9

Comparison of Direct Involvement with Individuals, Small Groups, and Large Groups for Teachers with and Without Aides

Group[a]	Type of Involvement	Mean[b]	SD	t value[c]	p
Teachers					
With Aides	Individual	.159	.140	-.5024	.6183
Without Aides		.132	.093		
Teachers					
With Aides	Small Group	.393	.219	.0514	.9593
Without Aides		.400	.213		
Teachers					
With Aides	Large Group	.366	.171	.1404	.8891
Without Aides		.366	.191		

[a] n = 20 for each group

[b] Mean proportion of time spent directly involved in various size groups

[c] df = 38

small groups of students, and large groups of students. It was rejected because two of the three subhypotheses were rejected (see Table 10).

Subhypothesis a. The hypothesis that no significant difference exists between the two in the total amount of human resource time given to individual students was rejected, t (22.8) = -4.0505, $p < .001$.

Subhypothesis b. The hypothesis that no significant difference exists between the two in the total amount of human resource time given to small groups of students was rejected, t (29.5) = -3.0870, $p < .005$.

Subhypothesis c. The hypothesis that no significant difference exists between the two in the total amount of human resource time given to large groups of students was accepted, t (38) = -1.9550, $p > .05$.

Discussion of the Findings Concerning Behaviors of Teachers and Aides

Statistical differences were found in only three of the 21 hypotheses tested concerning the performances of teachers with aides and teachers without aides. Statistical differences were also found which showed that aides made a direct contribution in increasing the amount of human resource time received by students. The following discussion not only provides an interpretive analysis of these differences but also a closer examination of the strong similarities revealed between PR and non-PR teachers. In

Table 10

Comparison of Direction of Amounts of Human Resource Time Given in Classrooms with and Without Aides

Group[a]	Directions of Human Resource Time	Mean[b]	SD	t value	df	p
Classrooms						
With Aides	To Individuals	49.6	35.5	-4.0505	22.8	.0005*
Without Aides		15.9	11.2			
Classrooms						
With Aides	To Small Groups	84.3	46.6	-3.0870	29.5	.0044**
Without Aides		47.6	25.6			
Classrooms						
With Aides	To Large Groups	61.5	33.1	-1.9550	38	.0580
Without Aides		43.9	22.9			

[a] n = 20 for each group

[b] Mean amount of total minutes given to various size groups during two consecutive mornings of 60-minute coding sessions

*$p < .001$

**$p < .005$

addition, aide and volunteer contributions are presented to allow for a broader understanding of the relationship between auxiliary personnel and teachers. Throughout all of this discussion, circumstances behind the coded data are provided through anecdotal descriptions in order to clarify what was seen.

Discussion of Findings Concerning Teacher Performances of Duties

Teacher noninstructional utilization of time. Teachers with aides and teachers without aides spent 7.9% and 9.6% of their time respectively, involved in noninstructional duties. The difference was not significant. This might be disturbing to some since one of the major reasons for placing aides in a classroom is to reduce significantly the amount of time teachers spend on noninstructional tasks. Yet, this finding was revealed after analyzing data which had been gathered during a time of the school day when both PR and non-PR classrooms were involved in the instructional program. Most classrooms had had at least 15 minutes prior to the commencement of coding in order to dissolve most clerical tasks which usually evolve from opening school. (In fact, only four teachers, all of whom were not in the PR program, were observed collecting lunch money.) Moreover, the negative difference between the two showed that teachers with aides were spending 1.7% less time on noninstructional duties.

Actually, observers saw very little teacher time being spent checking papers or completing forms. Most of the noninstructional time represents the time teachers spent in distributing papers and materials, in preparation for the use of audio-visual equipment, and in brief preparation for the forthcoming lessons.

Teacher monitorial utilization of time. Teachers with aides spent significantly less time (5.9%) on monitorial duties than did teachers without aides. In other words, teachers with aides spent less time interacting with students on nonsubstantive matters such as behavioral corrections and supervision of transitional periods.

Poor behavioral management was seen in only a few PR and non-PR classrooms. One especially rowdy third-grade class was led by a non-PR teacher who seemed to avoid making any authoritarian statement. Whenever a student misbehaved, the teacher blamed himself and apologized to the student. The great extent of informality in the class contributed to limiting the students' task engagement time. Similar results were derived in a polarly different PR classroom. This second class consisted of well-behaved third graders whose teacher repeatedly chastised them for not returning to her their previous day's work signed by their parents. She explained that besides wanting reassurance that the parents were being kept updated on their children's progress, her insistence in class and in her nightly calls to those homes

from which papers were irregularly returned was an effort on her part to teach responsibility. Yet, since this class was observed in May, this investigator wonders if the nine months of reprimands had failed and the teacher had refused to accept it. Indeed, a more responsible use of time might have been to have stopped the time-consuming morning ritual of reprimanding students for being delinquent in returning signed work and to spend this time on substantive instruction. These two teachers had polar viewpoints concerning discipline and work. Yet the monitorial coding for both classes was high. Out of the 120 codings for each, the first teacher was coded as monitoring 38 times and the second teacher was coded as monitoring 30 times. Practically all of their monitoring was behaviorally related.

Teacher instructional utilization of time. Teachers with aides spent significantly more time (8.2%) on instructional duties than did teachers without aides. Although tests of significance were not applied to comparisons of differences of time utilization among the three categories of teacher duties, examination of Table 5 suggests that both PR and non-PR teachers spent the largest proportion of their time performing instructional duties. While the significance of these differences is not the direct concern of the present study, the probability of their significance is reassuring. Most important for this study, more

instruction was being provided in classrooms where teachers have the assistance of aides.

Discussion of Teacher Instructional Time Spent on the Language Arts

Teacher instructional time spent on reading. Teachers with aides spent 6% more time on reading than did teachers without aides. Although the difference was favorable for the PR teachers, it was not significant. The lack of a larger difference was possibly because the need for reading instruction was emphasized to all teachers whether they were in the PR program or not.

Teacher instructional time spent on oracy. Both teachers with and without aides spent similarly small amounts of time on oracy. The most popular activity in both kinds of classrooms was show-and-tell during which teachers mostly listened to their students and interspersed a few questions concerning the students' topics. Almost no comments could be construed as teaching (see Table 11). Only when teachers were directly involved in modeling the listening behavior or in modeling responsible and concerned input into a dialogue were their behaviors labeled as teaching. During one show-and-tell class, however, a PR teacher ate her breakfast, talked with her aide, checked and discussed spelling papers with various students, and occasionally chastised the class for not paying attention to the speakers. Obviously, in an exaggerated sense it

Table 11

Comparison of Instructional Behaviors During Oracy Lessons of Teachers with and Without Aides

Group[a]	Instructional Behavior	Mean[b]	SD	t value[c]	p
Teachers With Aides	Teaching	.047	.056	-.0861	.9318
Teachers Without Aides		.048	.065		
Teachers With Aides	Assessing	.003	.008	-.3578	.7225
Teachers Without Aides		.003	.007		
Teachers With Aides	Assigning	.004	.010	-1.6206	.1134
Teachers Without Aides		.001	.004		
Teachers With Aides	Helping with Assignments[d]	0	0	---	---
Teachers Without Aides		0	0		

[a] n = 20 for each group

[b] Mean proportion of time spent on each instructional behavior

[c] df = 38

[d] All teachers had 0 in this category.

reflected the lack of serious concern that most teachers seemed to have toward show-and-tell. Moreover, at no time did the observers see a teacher direct a class in creative dramatics. The closest activities of this type involved students following finger plays and movement activities directed by teachers or recordings.

Teacher instructional time spent on writing. Teachers with aides spent only 1.4% more time on writing than did teachers without aides. Writing instruction for both was more similar than different. In perusing the explanations for the codings of both PR and non-PR teachers, it was discovered that approximately 50% of writing instruction for both concerned language usage, identification of parts of speech, and identification of subjects and predicates. The rest of the writing activities was often vaguely related to creative writing. Many involved writing sentences using spelling words or words with similar phoneme-grapheme relationships. Teachers seldom brainstormed with students about writing topics. The main exceptions were in the classrooms which used the Anne Adams' Success Program and in a PR classroom in which the teacher used the language experience approach to help individual students write Easter stories. Other similarities can be seen in Table 12 which presents the analysis of the instructional behaviors of both PR and non-PR teachers when they were involved in writing instruction.

Table 12

Comparison of Instructional Behaviors During Writing Lessons of Teachers with and Without Aides

Group[a]	Instructional Behavior	Mean[b]	SD	t value[c]	p
Teachers With Aides	Teaching	.063	.071	-.8495	.4009
Teachers Without Aides		.048	.062		
Teachers With Aides	Assessing	.020	.031	-.3514	.7272
Teachers Without Aides		.015	.023		
Teachers With Aides	Assigning	.015	.023	.3323	.7415
Teachers Without Aides		.020	.025		
Teachers With Aides	Helping with Assignment	0	0	---	---
Teachers Without Aides		.001	.002		

[a] n = 20 for each group

[b] Mean proportion of time spent on each instructional behavior

[c] df = 38

[d] All PR teachers had 0 in this category; therefore, a t test could not be applied.

Although this study did not seek the significance of differences between reading and writing instruction, an arithmetic comparison of the proportions of time spent by both PR and non-PR teachers on reading and writing suggests the possibility that writing ran a weak second to reading in having consumed more of teachers' instructional time. More specifically, it suggests that reading consumed approximately four times more teacher time than writing for both PR and non-PR teachers.

Teacher instructional time spent on spelling. The time both teachers with and without aides spent on spelling instruction was more similar than different. Each group spent approximately 8% of the time on spelling. Analysis of the instructional behaviors of both PR and non-PR teachers also revealed a high degree of similarity (see Table 13). This is disappointing especially in the performance of assessing. The use of assessing is an acceptable behavior for providing opportunities for applying spelling skills. Spelling tests are relatively simple to administer; yet, PR teachers continued to administer spelling tests although aides possibly could have assumed this responsibility. Moreover, very little evidence was seen of students having personalized spelling lists. Both observances suggest that aides are not being utilized advantageously in this subject area.

Table 13

Comparison of Instructional Behaviors During Spelling Lessons of Teachers with and Without Aides

Group[a]	Instructional Behavior	Mean[b]	SD	t value[c]	p
Teachers With Aides	Teaching	.045	.046	-.0943	.9254
Teachers Without Aides		.043	.048		
Teachers With Aides	Assessing	.019	.027	-.3097	.7585
Teachers Without Aides		.021	.053		
Teachers With Aides	Assigning	.022	.025	-.4794	.6344
Teachers Without Aides		.017	.020		
Teachers With Aides	Helping with Assignment	.0004	.002	1.0420	.3040
Teachers Without Aides		.001	.003		

[a] n = 20 for each group

[b] Mean proportion of time spent on each instructional behavior

[c] df = 38

(Oftentimes, spelling was taught during the conduction of reading groups. One minute the coder might have labeled the teacher's behavior as word identification because decoding was the skill being stressed; the next minute the teacher's behavior might have been coded as spelling because encoding was stressed. At times, the coders found a hazy distinction between the two.)

Teacher instructional time spent on handwriting. Both PR and non-PR teachers spent very little time (approximately 2% each) on handwriting instruction. Teachers commented that they tended to have large group instruction on penmanship at the beginning of the school year, and as the year progressed this type of instruction dwindled.

Most direct instruction on handwriting was observed in the first grade. The one exception and the best structured lesson observed on handwriting was conducted by a third-grade PR teacher who used an overhead projector to demonstrate cursive writing as she presented the week's spelling list. She had the students observe her as she skillfully formed the letters of the words. Throughout the process she verbally described her strokes. Next, the students imitated her writing while she and her aide looked over their shoulders and she chanted the directions for forming the word letters. In this particular case and for most of the handwriting instruction observed in first grade, the instructional behavior was classified as

teaching. The remainder of the observed handwriting time was consumed by teachers briefly assessing neatness or commenting to the class that they should complete assignments using their best penmanship (see Table 14).

The most disturbing penmanship assignment was observed in a non-PR third grade. The teacher had copied health rules upon large lined chart paper. Her penmanship demonstrated poorly formed letters and irregular spacing and slanting. Yet, her students were assigned the task of practicing their penmanship by following her model. This investigator was in this particular classroom three mornings, and the assignment was the same each morning.

Discussion of Teacher Instructional Time Spent on Reading Skills

Teacher instructional time spent on word identification.

Teachers with aides and teachers without aides spent an extremely similar amount of time on word identification. Examination of Table 15's charting of instructional behaviors of teachers during word identification instruction suggests that both PR teachers and non-PR teachers spent approximately twice as much time teaching word identification as they spent assessing and assigning word identification exercises. The significance of this difference was not tested. However, the possibility of its significance is not as reassuring as it should be. This is because at times the accuracy of this teaching was

Table 14

Comparison of Instructional Behaviors During Handwriting Lessons of Teachers with and Without Aides

Group[a]	Instructional Behavior	Mean[b]	SD	t value[c]	p
Teachers With Aides	Teaching	.010	.020	-.1520	.8800
Teachers Without Aides		.010	.021		
Teachers With Aides	Assessing	.006	.013	.2190	.8279
Teachers Without Aides		.006	.011		
Teachers With Aides	Assigning	.002	.005	.9091	.3690
Teachers Without Aides		.003	.006		
Teachers With Aides	Helping with Assignment[c]	0	0	---	---
Teachers Without Aides		.001	.004		

[a] n = 20 for each group

[b] Mean proportion of time spent on each instructional behavior

[c] df = 38

[d] All PR teachers had 0 in this category; therefore, a t test could not be applied.

Table 15

Comparison of Instructional Behaviors During Word Identification Instruction of Teachers with and Without Aides

Group[a]	Instructional Behavior	Mean[b]	SD	t value[c]	p
Teachers With Aides	Teaching	.083	.067	-.3141	.7552
Teachers Without Aides	Teaching	.078	.055		
Teachers With Aides	Assessing	.028	.033	-.4444	.6593
Teachers Without Aides	Assessing	.033	.037		
Teachers With Aides	Assigning	.012	.018	-.1142	.9097
Teachers Without Aides	Assigning	.010	.011		
Teachers With Aides	Helping with Assignments	.0004	.002	1.4951	.1432
Teachers Without Aides	Helping with Assignments	.002	.005		

[a] n = 20 for each group

[b] Mean proportion of time spent on instructional behavior

[c] df = 38

questionable. One PR teacher spent 6 minutes working with the long and short u sound. She insisted that ue in blue was pronounced /yū/ instead of /ü/ which is correct. One student protested that his lips became too distorted when he tried to say the word using that sound, but the teacher quickly admonished him for being disrespectful. Another PR teacher listed words on the board for students to group according to their long and short sounds. Although the list included words such as saw, look, and was, no mention was made that some words contained sounds that were neither long or short. Probably the most wasteful assignment in word identification was given by a third-grade non-PR teacher. On the first day of observation, each child in a small reading group was provided a long list of words (soup, could, about, pour, cough, journey, etc.) containing the vowel digraph ou. Students were asked to group together words with the same vowel sounds. The teacher who was not a native of this dialectal region, pronounced the words and briefly showed them how to group a few words. Later the group returned with their work. All of the students had made many errors. No instruction was provided; yet, the students were returned to their seats with directions to "go back over your work and make corrections." This investigator commented after the observation that the task was difficult because the sounds were often pronounced

differently in different dialectical regions. The teacher agreed. The next day the group quickly checked the worksheet. Again many students had grouped the words differently from the worksheet key. Although this assignment was this reading group's central theme of study for two days, the only time teaching was observed was at the end of the second day's lesson when the teacher conceded that pour and four are pronounced differently by different people. No further discussion of speech differences was encouraged.

Teacher instructional time spent on word meaning. Although teachers with aides spent (2.4%) more time on word meaning than did teachers without aides, the difference was not significant. Both PR and non-PR teachers who used the psychotechnics program spent time each morning on word identification and word meaning. Oftentimes, the two were taught simultaneously. One of these teachers, a PR teacher, played a game with her students which required them to identify word meanings through their knowledge of meanings of roots and prefixes and of the derivational importance of suffixes. The students displayed advanced skill in applying their knowledge. Obviously required daily direct instruction in these skills was proving to be successful.

Examination of Table 16 shows that PR teachers spent .8% more time assigning word meaning tasks than did

Table 16

Comparison of Instructional Behaviors During Word Meaning Instruction of Teachers with and Without Aides

Group[a]	Instructional Behavior	Mean	SD	t value[b]	p*
Teachers					
With Aides	Teaching	.048	.035	-.8685	.3906
Without Aides		.034	.025		
Teachers					
With Aides	Assessing	.009	.015	-.7483	.4589
Without Aides		.007	.019		
Teachers					
With Aides	Assigning	.011	.015	-2.2712	.0289
Without Aides		.003	.008		
Teachers					
With Aides	Helping with Assignment[c]	0	.0004	---	---
Without Aides		.0004	.002		

[a] n = 20 for each group

[b] df = 38

[c] All PR teachers had 0 in this category; therefore, a t-test could not be applied.

*p < .03

non-PR teachers. The difference was significant ($p < .03$). Nevertheless, the mean proportions were so small that this significance had no practical importance.

Teacher instructional time spent on oral reading. Although teachers with aides spent 2% less time listening to students read orally than did teachers without aides, the difference was not significant. The little time spent on oral reading was possibly reflective of this study's disproportionate number of third-grade classrooms. Inclusion of more first-grade classrooms might have increased the amount of time teachers spent on this reading category.

Teacher instructional time spent on silent reading. Teachers with aides spent only 1% more time on silent reading than did teachers without aides. In most cases when a teacher assigned silent reading to a small reading group she would dismiss or leave the group in order to work with others. Teachers seldom sat with a group as they read silently.

The most impressive large group silent reading exercise occurred in a PR classroom in which the teacher insisted that everyone in the room read silently. The teacher practiced most of McCracken and McCracken's (1972) Uninterrupted Sustained Silent Reading (USSR) procedures. Afterward, the teacher asked the aide if she was enjoying the book the teacher had previously recommended to her.

The teacher, also, commented to the class that she was at a very exciting place in her book and was anxious to return to the book in order to learn what happened to its heroine. Her students also volunteered comments about their reading. By these means this teacher used periods of USSR for demonstrating how reading can be a source of recreation and relaxation. The non-PR teacher who used USSR eliminated the element of modeling by using this quiet time for organizing materials for future lessons and monitoring the class. The contrast between these two teachers illustrated how additional help can reassure a teacher that the tasks of the day will be completed without having to push oneself constantly in order to be prepared but in the meantime to provide less than the best for those whom the push was originally meant to help.

Teacher instructional time spent on text comprehension. Teachers with aides spent 3.3% more time on text comprehension than did teachers without aides. Both PR and non-PR teachers performed similarly when they worked with students on text comprehension (see Table 17). That no significant differences were found between teachers with aides and teachers without aides implies that this study confirmed Durkin's similar findings (1978-1979). Yet, further analysis of significance might have shown no other similarities between Durkin's findings and this study's findings. Arithmetic examination of Table 17 suggests that

Table 17

Comparison of Instructional Behaviors During Text Comprehension Instruction of Teachers with and Without Aides

Group[a]	Instructional Behavior	Mean[b]	SD	t value[c]	p
Teachers With Aides	Teaching	.114	.062	-1.4177	.1644
Teachers Without Aides		.087	.067		
Teachers With Aides	Assessing	.016	.021	-.2649	.7925
Teachers Without Aides		.013	.016		
Teachers With Aides	Assigning	.016	.015	-.8333	.4099
Teachers Without Aides		.012	.013		
Teachers With Aides	Helping with Assignments	.002	.003	.5953	.5552
Teachers Without Aides		.003	.006		

[a] n = 20 for each group

[b] Mean proportion of time spent on text comprehension

[c] df = 38

teachers in this study consumed one of the higher amounts of reading time by interacting substantively with students concerning text comprehension. Furthermore, it suggests that teachers with and without aides spent more than three times the amount of time teaching as they spent assessing and assigning combined. Durkin's findings were quite different. According to her comprehension teaching had been replaced by assessing and assigning.

Teacher instructional time spent on study skills. Both teachers with and without aides spent very little time on study skills and the difference between the two was insignificant. For both the most popular lessons on study skills involved alphabetizing and using guide words. In addition, examination of Table 18 reveals that no significant differences were found between PR and non-PR teachers in the amount of time spent using any of the instructional behaviors.

Possibly, the most impressive study-skill lesson occurred in a small reading group in a PR third-grade classroom. The teacher taught word meanings and dictionary usage simultaneously. First, the teacher reviewed with the students the four alphabetical divisions of a dictionary and how this knowledge could help them find words faster. She then divided the group into two teams. Next, she announced the word for the students to race to locate in their own dictionaries. The team having the student who

Table 18

Comparison of Instructional Behaviors During Study Skills Instruction of Teachers with and Without Aides

Group[a]	Instructional Behavior	Mean	SD	t value[b]	p
Teachers With Aides	Teaching	.026	.038	-1.8108	.0788
Teachers Without Aides		.010	.023		
Teachers With Aides	Assessing	0	0	---	---
Teachers Without Aides		.002	.007		
Teachers With Aides	Assigning	.003	.007	-.2481	.8054
Teachers Without Aides		.002	.005		
Teachers With Aides	Helping with Assignments	.0004	.002	1.1322	.2647
Teachers Without Aides		.002	.004		

[a] n = 20 for each group

[b] df = 38

[c] All PR teachers had 0 in this category; therefore, a t test could not be applied.

first located the word was given the first opportunity to identify the correct meaning of that word as it was used in the sentence given by the teacher. The teacher consistently used words in their least frequently known context. The students' behavior made it obvious to this investigator that they enjoyed the game, had played it (or similar games) frequently, and were enamored with the multiple meanings of words. Moreover, the teacher demonstrated that she had spent time planning this activity. This was quite different from other classrooms where study-skill lessons were based on worksheet exercises or had less practical applicability.

Discussion of Overall Teacher Instructional Behaviors

The difference between the mean proportion of time spent teaching for teachers with and without aides was 7.6% which had a p value of .0524. Although this is slightly above the minimal level of significance set for this study, the finding is reassuring since teachers with aides spent a higher arithmetical (though not statistical) proportion of time teaching. Both PR and non-PR teachers spent more than twice as much time teaching as they spent using the other instructional behaviors combined. Again, because this study was not directly concerned with making across-category comparisons, these differences were not statistically proven to be significant. Yet, the possibility of

such differences causes this investigator to question Durkin's findings which also were not statistically verified.

Although teachers with aides spent slightly more time assessing and assigning than did teachers without aides, the differences were not significant. The coders were generally pleased to observe that teachers often combined teaching with assessing and assigning. Possibly because of this, very little helping with assignments was observed. Students in both PR and non-PR classrooms seldom interrupted a teacher and requested help with tasks that they had found difficult or confusing. Evidently, teachers had assigned appropriate assignments, were available to help when the students were in need, or had trained their students not to interrupt them while they were working with others. Despite the infrequency of this instructional behavior or, more correctly, because of it a significant difference was found which supported that teachers with aides spent less time helping with assignments. This does not necessarily mean that PR teachers assigned more appropriate tasks or had less dependent students because observers noted that students interrupted aides not PR teachers whenever they needed additional help.

Discussion of Teacher Direct Involvement with Individuals, Small Groups, and Large Groups

Teachers' direct involvement with individuals. For both PR and non-PR teachers one-to-one interaction was frequent but brief. Oftentimes, it occurred as teachers walked around the room stopping to comment to individuals concerning substantive or behavioral matters. Seldom was a teacher observed spending more than five minutes with one student. In fact, many individual encounters were never recorded because they lasted only a few seconds.

Teacher direct involvement with small groups. Teachers with aides and without aides spent an extremely similar amount of time working with small groups of students. Generally, small group instruction was spent in the subject area of reading. Most reading groups followed a similar process in which the teachers assembled their groups, checked written assignments completed the day before, discussed a selection read earlier or reviewed a reading skill, and assigned written tasks to be completed by the next reading class. During the 90-minute observation session teachers usually worked with at least two different reading groups while the remainder of the students remained at their seats completing assignments or, in the case of the PR classrooms, some worked with an aide.

Teacher direct involvement with large groups. PR and non-PR teachers spent an extremely similar amount of

time with large groups of students. To an extent this was disappointing since teachers with aides having available someone who could supervise the remaining students and keep them on task while they directed more frequently the attention of fewer students at one time. Nevertheless, this disappointment was lessened when in retrospect the coders acknowledged that some of the most structured, student-involved lessons were large-group lessons. Moreover, the coding of large-group instruction did not necessarily mean that the whole class was involved. Oftentimes, in the PR classrooms the teachers worked with the majority of students while their aides worked with individuals or small groups. This was the circumstance of one PR classroom in which the teacher was working on phonics and structural analysis skills with a large group while her aide was working in the corner with three students on similar skills. This teacher had arranged so that she could be directly informed concerning the understandings each student had of those skills that she covered. She had provided each student with a slate board and a piece of chalk. As she announced each word to be restructured, students wrote it on their slates. At a quick glance the teacher was aware if any student had erred. She seldom corrected those who had. Instead, she pointed out a few of those students who were correct and asked that all students check their work with the slates of those having

the correct spellings. She then proceeded to have the class identify various phoneme-grapheme relationships for each word, write derivative forms of it, and add inflectional endings to it. For example, in working with the word brush, the teacher asked the students to circle the consonant blend, to circle the consonant digraph, to make brush plural, and to make it a past-tense verb. Every student was applying the skills and the teacher was aware of how well each was doing. Obviously, large-group instruction need not be ineffective, and it was not in this case.

In contrast, some lessons were observed in which the teachers engaged whole classes in answering item-by-item exercises which were listed on worksheets, on the chalkboards, or in their books. During these lessons students appeared to be less involved than those students in the PR class described above.

Discussion of Findings Concerning Direct Contributions of Auxiliary Personnel

Discussion of Human Resource Time Contributed by Teachers and Auxiliary Personnel

Students' chances of receiving closer interaction with an adult were indeed increased in PR classrooms. Three times more human resource time was provided individuals in classrooms with aides than individuals in classrooms without aides. More specifically, as can be seen in

Table 10, in PR classrooms teachers and aides had a total average of 49.6 minutes coded as being directed at individuals. During the same amount of coding time (120 minutes), non-PR teachers were able to provide individuals only an average of 15.9 minutes. Small-group interaction was almost doubled in PR classrooms as compared to non-PR classrooms. As with the difference in human resource time directed toward individuals, the difference in time directed toward small groups was significant. However, the average difference between PR and non-PR classrooms in the amount of human resource time directed toward large groups was only 17.6 minutes. That this is not significant at the .05 level is not disturbing especially since the more preferable interactions with individuals and small groups were significantly increased when aides were in the classrooms.

This particular study credits aides with increasing opportunities for closer adult-student interactions; yet, cannot the same be accomplished with volunteers? The answer to this is yes--if enough volunteers can be found to provide consistently the same services as aides provide. But, that in itself is the problem. Although the use of volunteers is supposed to be a major component of the Primary Reading Program, of the 1,200 minutes of coded observations in PR classrooms not one volunteer was observed. The only third person who worked within the

Table 19

Comparison of Direction of Amounts of Human Resource Time Given by All Adults in PR and Non-PR Classrooms

Group[a]	Directions of Human Resource Time	Mean[b]	SD	t value	df	p
Classrooms						
PR	To Individuals	50.55	35.12	-3.6581	26.5	.0011*
Non-PR		19.00	15.95			
Classrooms						
PR	To Small Groups	87.45	51.96	-3.0769	27.7	.0047**
Non-PR		47.60	25.60			
Classrooms						
PR	To Large Groups	62.00	32.97	-2.0163	38	.0509
Non-PR		43.90	22.90			

[a] n = 20 for each group

[b] Mean amount of total minutes given to various size groups during two consecutive mornings of 60-minute coding sessions

*p < .002

**p < .005

confines of a PR classroom during the observation sessions was an interning aide. In contrast, on three separate occasions volunteers were observed working in non-PR classrooms. When these non-employed people were taken into consideration in comparing PR and non-PR classrooms, their contributions in human resource time given to individuals, small groups, and large groups was not evidenced by changing the basic significance of earlier results (see Table 19 and Table 10 for comparison). The 20 PR classrooms with their 20 teachers, 20 aides, and 1 aide intern still provided significantly more human resource time to individuals and small groups than did the 20 non-PR classrooms with their 20 teachers and 3 volunteers. Obviously, volunteers cannot contribute significantly if their members are few, their visits irregular, and their contacts are limited.

Discussion of Auxiliary Personnel's Overall Contributions to Classrooms

While aides were enabling teachers to spend less time monitoring and more time involved in instruction, they were also making their own direct contributions. As can be seen in Table 20, aides spent slightly more than one-third of their time on noninstructional tasks. They collected lunch money, corrected papers, filed papers, put up bulletin boards, and ran errands. Most aides appeared to be performing their tasks without specific

Table 20

Percentage Distribution of Aide Distribution of Time

Duty	%age	Instructional Subject Area	%age	Direction of Group Involvement	%age
Non-instructional	34.83	Reading	38	Individual	19
Monitorial	9.66	Other Language Arts	14.13	Small Group	36.79
Instructional	53.01	Non-language Arts	.88	Large Group	6.88

directions from their teachers. They seemed to know their responsibilities without having to interrupt the teachers for further orders. One exception was observed in a classroom directed by an authoritarian teacher who had commented earlier that she limited the duties of her aide. In this particular case, the aide appeared to be very inept. She did not correct misbehavior which occurred directly in front of her, and she interrupted the teacher's reading group twice to ask the teacher how to prepare a bulletin board. Although this behavior was certainly unacceptable, the teacher's behavior was possibly equally inept. This teacher attempted to control her class by belittling students, by talking loudly, and by magnifying her own importance. For her to have relinquished responsibility to a subordinate would have been out of

character. Thus, the ineptitude of the aide may have been a direct reflection of the teacher's inability to model acceptable behavior and to provide decision-making opportunities.

Although aides spent slightly less than 10% of their time monitoring, it was the consensus of the observers that in those classrooms where aides seemed to have the freedom to make behavioral corrections, students behaved better. In the other classrooms where teachers were more authoritarian, aides tended to be restricted to noninstructional duties and to instructional interactions with students on an individual or small group basis. Thus, aides' assumption of monitorial and broad instructional responsibilities might possible have been reflective of their acceptance into the classroom by both teachers and students.

In the PR classrooms observed in this study, aides spent more than half of their time interacting instructionally with one to four students at a time. Most aides conducted reading groups while the teachers were directing their own groups on the other side of the room. Aides displayed varying levels of teaching skill. In one classroom an aide was observed working individually with two educable mentally retarded boys. For two consecutive mornings she called each boy to her desk and proceeded to point to and identify several sight words listed on a sheet of paper. Each boy was asked to repeat the words in a

parrot-like manner. Very seldom, if ever, were the words placed in context. In another classroom an aide was observed teaching a limited number of sight words to individuals by presenting them in written context on sentence strips and then having the students dictate their own sentences using these same words. Some aides routinely checked spelling, reading, and language assignments with students while others directed students in performing more divergent tasks in creative writing or puppetry. Although the more skilled and creative aide is preferred by this investigator, the teacher to whom the aide is assigned may have other preferences for whatever reasons. Thus, in order to create a working relationship the aides' performances observed during this study must be judged as affected by the teachers' demands.

Most aides and teachers had created relationships at varying levels of symbiosis. Even the interning aide performed her responsibilities without interrupting the performances of the regular classroom aide or teacher. This was not necessarily the case for volunteers (see Table 21). Their arrivals were a bit disruptive either to the students or the teacher. One volunteer interrupted a non-PR teacher as she was teaching a small reading group. The teacher had to give the volunteer directions and later had to leave the room with the volunteer in order to show her the location of the paper cutter and how to cut paper.

Table 21

Distribution of Other Auxiliary Personnel's Utilization of Time

Other Auxiliary Personnel	Duty			Instructional Subject Area			Direction of Group Involvement		
	Noninstructional	Monitorial	Instructional	Reading	Other Language Arts	Non-language Arts	Individual	Small Group	Large Group
Aide intern	28	4	88	78	10	-	19	63	10
Volunteer 1	1	-	-	-	-	44	44	-	-
Volunteer 2	27	-	-	3	-	-	3	-	-
Volunteer 3	-	-	-	15	-	-	15	-	-

Note. Numbers represent the number of minutes coded as being spent in each category.

In total the volunteer was responsible for taking the teacher away from her students for at least eight minutes. In return, the volunteer answered questions of individuals concerning a reading assignment for three minutes and spent the rest of the time cutting paper. The other two volunteers worked with preassigned individuals either on sight words or multiplication facts.

Although the few individual students with whom the volunteers worked possibly benefited from the attention directed to them by the volunteers, this investigator believes that overall these volunteers were more liable than beneficial to the teachers' utilization of time. In order for a symbiotic relationship to occur, teachers, their assistants, and the students need the stability of a regular routine with each participant having an understanding of the needs of the classroom and the available resources for meeting these needs.

Obviously, aides have been more productive and have had more opportunity to create a working relationship with teachers than have volunteers. A summation of the study's findings concerning just how productive and how successful is this relationship is presented in Chapter 5.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents a summary of the study, followed by conclusions. The final part of this chapter contains recommendations for further research. Discussion of this research while based on the findings is subject to limitations cited earlier regarding the sample, the criteria of the categories, and coder variances.

Summary

The major purpose of this study was to compare the utilization of time of teachers with aides and teachers without aides. Specifically, this investigation compared the proportion of time teachers with and without aides spent in performing noninstructional, monitorial, and instructional duties; in directing lessons concerning the various language arts and particular reading skills; in using each of the instructional behaviors of teaching, assessing, assigning, and helping with assignments; and in being involved with individual students, small groups of students, and large groups of students. The direct effect of aides was also examined by comparing the amount of human resource time made available to individuals, small groups, and large groups in classrooms with and without aides. Further

analysis of the data showed how aides and volunteers utilized their time while assisting teachers.

A review of relevant research indicated that in classrooms where substantive interaction between teachers and students increased, students' academically engaged time increased which, in turn, generally resulted in improving learning gains. Educators and the public have mixed opinions concerning whether aides enable teachers to increase substantive interaction with students. Actually, research findings have been inconsistent in their support of the effectiveness of aides and whether teachers have taken advantage of the assistance from aides in order to work more closely and frequently with their students on substantive matters. In fact, questions have been raised concerning whether teachers continue to perform and provide the same program of instruction as they had prior to having aides to assist them. Moreover, concern has been voiced that aides might be more of a liability than an asset to the teacher and his or her instructional program.

In order to examine the influence of aides on the teachers' utility of time and the language arts instructional program, forty classrooms were observed for a total of 4,800 minutes. Twenty of these classrooms were served by teachers without aides and twenty had teachers with aides. Each classroom's language arts program was observed for two consecutive mornings, and teacher and aide behavior was

coded a total of 120 times each using one-minute intervals between each coding. Data gathered from the classrooms with aides and classrooms without aides were compared using the two-sample *t* test and the .05 level of significance to determine whether the following null hypotheses should be accepted or rejected:

1. No significant differences exist between teachers with and without aides in the utilization of time.

2. No significant differences exist between teachers with and without aides in the proportion of teacher instructional time spent on reading, oracy, writing, spelling, and handwriting.

3. No significant differences exist between teachers with and without aides in the proportion of reading instructional time spent on word identification, word meaning, oral reading, silent reading, text comprehension, and study skills.

4. No significant differences exist between the teachers with and without aides in the proportion of language arts instructional time spent teaching, assessing, assigning, and helping with assignments.

5. No significant differences exist between teachers with and without aides in the proportion of time spent in direct involvement with individual students, small groups of students, and large groups of students.

6. No significant differences exist between classrooms which have teachers with aides and classrooms which have teachers without aides in the total amount of human resource time given to individual students, small groups of students, and large groups of students.

Following the statistical analysis, hypotheses 1, 4, and 6 were rejected while hypotheses 2, 3, and 5 were accepted.

Conclusions

Teacher aides were found to have a positive effect upon improving teacher utilization of time. Aides enabled teachers to spend less time on monitoring nonsubstantive student behavior and more time interacting substantively with students. The instructional behavior of teachers with aides was different from those of teachers without aides in that they spent less time helping confused students who had interrupted them seeking further assistance with assignments. When this assistance was needed, which was seldom, students in classrooms with aides were more likely to interrupt the aide than the teacher. Finally, although teachers with aides did not spend significantly more time teaching than did teachers without aides, their instructional behavior was positively directed toward providing more teaching rather than assessing and assigning, and, in fact, received a p value of .0524 which was only slightly

above the .05 level of significance used in this study.

Together, teachers and aides were able to increase the amount of human resource time provided to individual students and small groups. Aides spent a substantial amount of time interacting with students concerning behavioral and instructional matters. Thus, in the case of the Primary Reading Program the lowering of adult-student ratios increased the opportunities for students to have direct contact with an adult.

The language arts programs of teachers with and without aides were more similar than different. Teachers with aides did not provide different proportions of time to reading, oracy, writing, spelling, or handwriting, nor did they provide different proportions of time to word identification, word meaning, oral reading, silent reading, text comprehension, or study skills. The actual increase in lessons in these subject areas was through the instructional programs that aides were providing. For the most part aides' instructional behaviors and programs appeared to be imitations of the teachers' behaviors and programs. In other words, although aides were observed helping students converge on developing basic understanding and skills in the language arts, teachers were also providing similar convergent instruction. Teachers were not increasing the opportunities for students to follow their leadership in

creating through the more divergent activities of creative dramatics and writing.

Finally, although teachers with aides did not spend significantly more time with individual students, small groups of students, or large groups of students than did teachers without aides, students in the classrooms with aides were still provided more opportunities for individual and small-group interaction with an adult because of aide involvement.

This investigator commends the teachers and aides in the PR classrooms for creating working relationships in which:

1. Teachers are able to spend more time involved in the instructional program.

2. Teachers are able to spend less time monitoring transitional periods and correcting behavior.

3. Teachers are able to spend less time being interrupted by confused students who need further assistance with assignments.

4. Teachers and aides are able to work together to provide more opportunities for students to receive individual and small-group attention.

This investigator recommends that teachers with aides examine their language arts instructional program to ascertain whether:

1. They can provide more leadership time to the more divergent activities such as creative dramatics and creative writing while their aides perform the more convergent activities such as directing students in drill sessions and the completion of review exercises. (In cases in which aides have leadership capabilities for directing divergent activities, teachers should share the responsibilities of leadership or switch the roles as suggested above.)

2. They can increase their teaching time by delegating to their aides more responsibilities in such assessment activities as administering spelling tests and checking with students the less involved review exercises.

Finally, this investigator encourages teachers and aides to strive to improve their own knowledge of the subject matter that they are charged with teaching. They should continuously ask themselves if their methods and materials are indeed aimed at increasing the students' ability to communicate. If not, then they need to ask why they are using them. More awareness of what should be taught and how it should be taught is best developed through inservice workshops. This investigator encourages all school systems to make a concerted effort to include both teachers and their aides in attending these workshops. Evidence was seen that supported the need for providing instruction concerning:

1. The creation of sharing relationships between teachers and aides in which aides are encouraged to make behavioral corrections and to assist a student not directly assigned to him or her;

2. Phoneme-grapheme relationships and how an understanding of phonics can help students improve their decoding and encoding skills;

3. Specific methods in directing students in creative writing; and

4. Specific methods in developing oracy skills especially through show-and-tell activities and creative dramatics.

Through inservice workshops and open discussions, teachers and aides can grow together in understanding their own and each other's strengths and weaknesses in order to create a professional marriage from which students can only benefit. It is the belief of this investigator that the Primary Reading Program has just begun to produce the desirable learning gains that can result from this union of teachers and aides.

Recommendations for Further Study

This investigation dealt specifically with comparing behaviors of teachers with aides and teachers without aides. The data gathered for comparisons were limited in involving only teachers, aides, a few volunteers, the primary language

arts program, and the beginning 90 minutes of a school day. Because of these limitations, the following recommendations for further research are proposed:

1. Academic learning time for students in classrooms with aides and classrooms without aides needs to be compared in order to ascertain if teachers and aides are indeed increasing students' substantive engagement time.

2. Since each grade level has its own particular instructional peculiarities, a similar study needs to be conducted limiting comparisons to classrooms on the same grade level.

3. Since language arts instruction is supposed to be integrated into the total curriculum, observational data need to be gathered from periods throughout the day in order to compare teachers with aides and teachers without aides.

REFERENCE NOTES

1. Hill, A. T. Personal communication with the Assistant Controller of the North Carolina Public Schools, January 27, 1981.

2. Mooney, C. D. Survey on future directions, aides, discipline. Raleigh, N. C.: North Carolina Association of Educators, May 1978.

3. Middleton, H. The leader of creative drama. Unpublished manuscript, University of North Carolina at Greensboro, May 1976.

4. United States Bureau of the Census. 1980 census. Preliminary data in preparation, Charlotte, N. C., February 1981.

BIBLIOGRAPHY

Ackerman, W. I. Teacher competence and pupil change. Harvard Educational Review, 1954, 24, 273-289.

Allington, R. L. Sustained approaches to reading and writing. Language Arts, 1975, 52, 813-815.

Anastasiow, N. Oral language: Expression of thought. Newark, Del.: International Reading Association, 1971. (ERIC Document Reproduction Service No. ED054 393)

Anderson, L. M., Evertson, C. M., & Brophy, J. E. An experimental study of effective teaching in first-grade reading groups. The Elementary School Journal, 1979, 79, 193-224.

Anderson, R. C. Learning in discussions: A resumé of the authoritarian-democratic studies. Harvard Educational Review, 1959, 29, 201-215.

Baldwin, C. P. Naturalistic studies of classroom learning. Review of Educational Research, 1965, 35, 107-113.

Barr, A. S., Bechdolt, B. V., Gage, N. L., Orleans, J. S., Pace, C. R., Remmers, H. H., & Ryans, D. G. Second report of the Committee on Criteria of Teacher Effectiveness. Journal of Educational Research, 1953, 46, 641-658.

Bennett, N., Jordan, J., Long, G., & Wade, B. Teaching styles and pupil progress. Cambridge, Mass.: Harvard University Press, 1976.

Bennett, W. S., Jr., & Falk, R. F. New careers and urban schools. Atlanta: Holt, Rinehart & Winston, 1970.

Bergquist, H. J. The influence of teacher aides on student attitudes and achievement (Doctoral dissertation, University of North Dakota, 1968). Dissertation Abstracts, 1968-1969, 29, 3791A. (University Microfilms No. 69-8553)

Bingham, A., & Dusenbery, B. Just talking isn't enough. Language Arts, 1979, 56, 275-278.

Blank, E. W. The effectiveness of creative dramatics in developing voice, vocabulary and personality in the primary grades. Speech Monographs, 1954, 21, 190.

Bloom, B. S. Learning for mastery. Evaluation Comment, 1968, 1 (2), 1-11.

Bond, G. L., & Dykstra, R. The cooperative research program in first-grade reading instruction. Reading Research Quarterly, 1967, 2 (4), 5-142.

Bordan, S. D. Plays as teaching tools in the elementary school. West Nyack, N. Y.: Parker Publishing Co., 1970.

Brookover, W. B., Schweitzer, J. H., Schneider, J. M., Beady, C. H., Flood, P. K., & Wisenbaker, J. M. Elementary school social climate and school achievement. American Educational Research Journal, 1978, 15, 301-318.

Brophy, J. E. Teacher behavior and its effects. Journal of Educational Psychology, 1979, 71, 733-750.

Brophy, J. E., & Evertson, C. M. Process-product correlations in the Texas Teacher Effectiveness Study (Final Report). Austin: University of Texas, Research and Development Center for Teacher Education, 1974. (ERIC Document Reproduction Service No. ED 091 394)

Brophy, J. E., & Putnam, J. G. Classroom management in the elementary grades. In D. L. Duke (Ed.), Classroom management: The seventy-eighth yearbook of the National Society for the Study of Education, part II. Chicago: University of Chicago Press, 1979.

Brubaker, D. L. Creative leadership in elementary schools. Dubuque, Iowa: Kendall/Hunt Publishing, 1976.

Burger, I. B. Creative play acting: Learning through drama. New York: Ronald Press, 1950.

Burt, M. W. The effects of trained paraprofessional classroom instructional aides on the reading achievement of socio-economically disadvantaged first grade children (Doctoral dissertation, University of Michigan, 1975). Dissertation Abstracts International, 1976, 36, 6438A. (University Microfilms No. 76-9357)

Canfield, R. How useful are lessons for listening. The Elementary School Journal, 1961, 46, 511-517.

Cantrell, R. P., Stenner, A. J., & Katzenmeyer, W. G. Teacher knowledge, attitudes, and classroom correlates of student achievement. Journal of Educational Psychology, 1977, 69, 172-179.

Carroll, J. B. A model for school learning. Teachers College Record, 1963, 64, 723-733.

Carter, W. T. The Career Opportunities Program: A summing up. In A. Gartner, F. Riessman, & V. C. Jackson (Eds.), Paraprofessionals in education today (Vol. 1). New York: Human Service Press, 1977.

Chang, S., & Ogletree, E. J. The effect of class size on academic achievement. n. p., 1979. (ERIC Document Reproduction Service No. ED 182 311)

Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfield, F. D., & York, R. L. Equality of educational opportunity. Washington, D. C.: U. S. Government Printing Office, 1966. (ERIC Document Reproduction Service No. ED 012 275)

Creative dramatics spurs verbal development in Rhode Island. Nation's Schools, 1972, 90, 51-52.

Croft Administrator's Service. Croft leadership action folio 48: The paraprofessional story. New London, Conn.: Croft Educational Services, 1972.

Cunningham, P. M. Scratch, scribe and scribble. Teacher, 1978, 96, 68-70, 79.

Douglas, W. W. On teaching the process of writing. In A. Frazier (Ed.), New direction in elementary English. Urbana, Ill.: National Council of Teachers of English, 1967.

Dunkin, M., & Biddle, B. The study of teaching. New York: Holt, Rinehart & Winston, 1974.

Durkin, D. Comprehension instruction--where are you? Urbana, Ill.: Center for the Study of Reading, University of Illinois, 1977. (ERIC Document Reproduction Service No. ED 146 566)

Durkin, D. What classroom observations reveal about reading comprehension instruction. Reading Research Quarterly, 1978-1979, 14, 481-533.

Durland, F. C. Creative dramatics for children. Kent, Ohio: Kent State University Press, 1975.

Emmerling, F. C., & Chavis, K. Z. The teacher aide in North Carolina's Comprehensive School Improvement Project (Publication no. 395). Raleigh, N. C. : State Department of Public Instruction, 1967.

Fawcett, A. E. Training in listening. Elementary English, 1967, 43, 473-476.

Fisher, C. W., Berliner, D. C., Filby, N. N., Marliave, R., Cahen, L. S., Dishaw, M. M., & Moore, J. E. Teaching and learning in the elementary school: A summary of the Beginning Teacher Evaluation Study (Report VII-1. Beginning Teacher Evaluation Study technical report series). San Francisco: Far West Laboratory for Educational Research and Development, 1978. ERIC Document Reproduction Service No. ED 165322) (a)

Fisher, C. W., Filby, N. N., Marliave, R. S., Cahen, L. S., Moore, J. E., & Berliner, D. C. A study of instructional time in grade 2 reading (Technical report II-4. Beginning Teacher Evaluation Study). Far West Laboratory for Educational Research and Development, 1978. (ERIC Document Reproduction Service No. ED 145 414) (b)

Fitzgerald, B. S. Let's act the story. San Francisco: Fearon Publishers, 1957.

Flanders, N. A. Analyzing teaching behavior. Reading, Mass.: Addison-Wesley, 1970.

Frelow, R. D., Charry, J., & Freilich, B. Academic progress and behavioral changes in low achieving pupils. The Journal of Educational Research, 1974, 67, 263-266.

Glass, G., & Smith, M. L. Meta-analysis of research on the relationship of class size and achievement. The Class Size and Instruction Project. San Francisco: Far West Regional Laboratory, 1978. (ERIC Document Reproduction Service No. ED 168 129)

Good, T. L. Teacher effectiveness in the elementary school. Journal of Teacher Education, 1979, 30, 52-64.

Goralski, P. J., & Kerl, J. M. Kindergarten teacher aides and reading readiness, Minneapolis public schools. Journal of Experimental Education, 1968, 37 (2), 34-38.

Graves, D. H. We don't let them write. Language Arts, 1978, 55, 635-640.

Guess, D., Smith, J. O., & Ensminger, E. The role of nonprofessional persons in teaching language skills to mentally retarded children. Exceptional Children, 1971, 37, 447-453.

Haberman, M., & Larson, R. G. Would cutting class size change instruction? National Elementary Principal, 1968, 47, 18-19.

Harris, A. J., Morrison, C., Serwer, B. L., & Gold, L. A continuation of the CRAFT project: Comparing reading approaches with disadvantaged urban Negro children in primary grades (Final report). New York: City University of New York Division of Teacher Education, 1968. (ERIC Document Reproduction Service No. ED 020 297)

Harris, A. J., & Serwer, B. L. Comparison of reading approaches in first grade teaching with disadvantaged children (the CRAFT project). New York: City University of New York Division of Teacher Education, 1966. (ERIC Document Reproduction Service No. ED 010 037)

Hautala, L. W., & Aaron, R. L. Time-use: A variable in teacher effectiveness. Paper presented at the annual meeting of the National Reading Conference, New Orleans, 1977. (ERIC Document Reproduction Service No. ED 147 790)

Hayden, R., Murdoch, R., & Quick, C. Teacher aides improve attention span. The Elementary School Journal, 1971, 37, 447-453.

Heath, R. W., & Nielson, M. A. Performance-based teacher education. Review of Educational Research, 1974, 44, 463-484.

Herbert, J. A system of analyzing lessons. New York: Teachers College Press, 1967.

Hiatt, D. B. The effect of teacher aides on use of time and individualization of instruction by primary teachers (Doctoral dissertation, University of California, Los Angeles, 1976). Dissertation Abstracts International, 1977, 37, 4720A. (University Microfilms No. 77-1635

Hodges, C. A. Commentary: Toward a broader definition of comprehension instruction. Reading Research Quarterly, 1980, 15, 299-306.

Hunt, L. The effect of self-selection interest, and motivation upon independent, instructional and frustration levels. The Reading Teacher, 1970, 24, 146-151, 158.

Hyer, A., & McClure, R. M. New patterns of teacher tasks and their implications: The effect of innovations on staffing patterns and teacher roles in the United States. Paris, France: Organisation for Economic Cooperation and Development, 1973. (ERIC Document Reproduction Service No. ED 086 684)

Hyman, R. T. Ways of teaching. New York: J. B. Lippincott, 1970.

Jackson, A. H. Teacher attitudes, job satisfaction, and demographic factors as related to teachers with and without aides (Doctoral dissertation, University of Miami, 1972). Dissertation Abstracts International, 1972, 33, 4798A (University Microfilms No. 73-5822)

Jackson, P. Life in classrooms. New York: Holt, Rinehart and Winston, 1968.

Karnes, M., Teska, J., & Hodgins, A. The successful implementation of a highly specific pre-school instructional program by paraprofessionsl teachers. Journal of Special Education, 1970, 4, 69-80.

Karweit, N. Quantity of schooling: A major educational factor? Educational Researcher, 1976, 5, 15-17.

Kounin, J. Discipline and group management in classrooms. New York: Holt, Rinehart and Winston, 1970.

Kunkel, R. W. A study of communication patterns of teachers using teacher aides as compared to those not using teacher aides (Doctoral dissertation, University of South Dakota, 1968). Dissertation Abstracts, 1968-1969, 29, 3771A-3772A. (University Microfilms No. 69-8539)

Lambert, N. M. Methodological considerations in the evaluation of differential components of supplementary education programs. Journal of School Psychology, 1976, 14, 171-185.

Loban, W. The language of elementary school children. Champaign, Ill.: National Council of Teachers of English, 1963.

Lundsteen, S. W. Critical listening: An experiment. Elementary School Journal, 1966, 66, 311-315.

McCracken, R. A., & McCracken, M. J. Reading is only the tiger's tail: A language arts program. San Rafael, Calif.: Leswing Press, 1972.

McDonald, F. J. Beginning Teacher Evaluation Study: Phase II, 1973-1974 (Summary report). Princeton, N. J.: Educational Testing Service, 1976. (ERIC Document Reproduction Service No. ED 127 375)

McDonald, F. J., & Elias, P. J. Beginning Teacher Evaluation Study, Phase II, 1973-1974 (Executive summary report). Princeton, N. J.: Educational Testing Service, 1976. (ERIC Document Reproduction Service No. ED 142 592)

McKinney, J. D., Mason, J., Perkerson, K., & Clifford, M. Relationship between classroom behavior and academic achievement. Journal of Educational Psychology, 1975, 67, 198-203.

Medley, D. M. The effectiveness of teachers. In P. L. Peterson & H. J. Walberg (Eds.), Research on teaching: Concepts, findings, and implications. Berkeley, Calif.: McCutchan, 1979.

Medley, D. M., & Mitzel, H. E. Measuring classroom behaviour by systematic observation. In N. L. Gage (Ed.), Handbook of research on teaching. Chicago: Rand McNally, 1963.

Miller, J. L. A comparison of how first grade classroom teachers with and without full time teacher aides utilize instructional time and the effect of aide utilization upon academic performance of children. Doctoral dissertation, University of Maryland, 1970. (ERIC Document Reproduction Service No. ED 043 595)

Morsh, J. E., & Wilder, E. W. Identifying the effective instructor: A review of the quantitative studies (Research bulletin AFPTRC-TR-54-44, 1900-1952). San Antonio, Texas: Air Force Personnel and Training Research Center, 1954.

Mosteller, F., & Moynihan, D. On equality of educational opportunity. New York: Random House, 1972.

National Education Association Research Division. How the profession feels about teacher aides: Teacher opinion poll. NEA Journal, 1967, 56, 16-17.

National Education Association Research Division. Status of the American public school teacher: 1975-76. Washington, D. C.: Author, 1977.

North Carolina Department of Administration, Division of State Budget and Management, Research and Planning Services. Profile: North Carolina counties update. Raleigh, N. C.: Author, 1978.

North Carolina Department of Administration, Division of State Budget and Management, Research and Planning Services. North Carolina state government statistical abstract (4th ed.). Raleigh, N. C.: Author, 1979.

North Carolina Department of Public Education, Division of Statistical Services. Statistical profile: North Carolina public schools. Raleigh, N. C.: Author, 1980.

North Carolina Department of Public Instruction, Division of Information and Publications. North Carolina Education Directory, 1979-1980. Raleigh, N. C.: Author, 1979.

North Carolina Department of Public Instruction, Division of Reading. Primary Reading Program, 1979-80. Raleigh, N. C.: Author, 1979.

North Carolina Department of Public Instruction, Division of Research. Comparisons of reading performance of students enrolled in either the Primary Reading Program, the CETA Reading Program, or reading programs in the regular classrooms. Raleigh, N. C.: Author, 1979. (a)

North Carolina Department of Public Instruction, Division of Research. Report of student performance: 1978-1979. Raleigh, N. C.: Author, 1979. (b)

North Carolina Department of Public Instruction, State Administration, Title I, Elementary Secondary Education Act. Aides for better schools. Raleigh, N.C.: Author, 1967.

Otto, H. J., & von Borgersrode, F. Class size. In W. S. Monroe (Ed.), Encyclopedia of educational research (2nd ed.). New York: MacMillan, 1950.

Popham, W. J. Teaching skill under scrutiny. Phi Delta Kappan, 1971, 52, 519-602.

Porcher, N. C. A study of the relationship of time utilization and reinforcement scheduling on the teaching of reading in second and third grade classrooms (Doctoral dissertation, University of Georgia, 1974). Dissertation Abstracts International, 1975, 35, 6560A-6561A. (University Microfilms No. 75-8194)

Purkey, W. W. Self-concept and school achievement. Englewood Cliffs, N. J.: Prentice-Hall, 1970.

Purkey, W. W. Inviting school success: A self-concept approach to teaching and learning. Belmont, Calif.: Wadsworth, 1978.

Rosenshine, B. V. Interpretative study of teaching behaviors related to student achievement. Philadelphia: Temple University, 1970. (ERIC Document Reproduction Service No. ED 051 116)

Rosenshine, B. V. Recent research on teaching behaviors and student achievement. Journal of Teacher Education, 1976, 27, 61-64.

Rosenshine, B. V. Content, time, and direct instruction. In P. L. Peterson & H. J. Walberg (Eds.), Research on teaching: Concepts, findings, and implications. Berkeley, Calif.: McCutchan, 1979.

Rosenshine, B. V., & Furst, N. The use of direct observation to study teaching. In R. Travers (Ed.), Second handbook of research on teaching. Chicago: Rand McNally, 1973.

Ryan, D. W., & Greenfield, T. B. The class size question: Development of research studies related to the effects of class size, pupil/teacher ratios. Toronto, Ontario: Ontario Institute for Studies in Education, 1975. (ERIC document Reproduction Service No. ED 163 656)

Ryans, D. G. Characteristics of teachers: Their description, comparison, and appraisal. Washington, D. C.: American Council on Education, 1960.

Saadeh, I. Q. Teacher effectiveness of classroom efficiency: A new direction in the evaluation of teaching. The Journal of Teacher Education, 1970, 21, 73-87.

Samuels, S. J., & Turnure, J. E. Attention and reading achievement in first-grade boys and girls. Journal of Educational Psychology, 1974, 66, 29-32.

Sauers, V. J. Guidelines for the selection and utilization of paid teacher aides in elementary public schools (Doctoral dissertation, University of Pennsylvania, 1968). Dissertation Abstracts, 1968-1969, 29, 1088A. (University Microfilms No. 68-14, 463)

Schoeller, A. W., & Pearson, D. W. Better reading through volunteer reading tutors. The Reading Teacher, 1970, 23, 625-630, 636.

Shapson, S. M., Wright, E. N., Eason, G., & Fitzgerald, J. Results of an experimental study of the effects of class size. A paper presented at the annual conference of the American Educational Research Association, 1978. (ERIC Document Reproduction Service No. ED 151 985)

Siks, G. B. Creative dramatics: An art for children. New York: Harper & Row, 1958.

Slade, P. Child drama. New York: Philosophical Library, 1955.

Smith, B. O. (Ed.). Research in teacher education: A symposium. Englewood Cliffs, N. J.: Prentice Hall, 1971.

Smith, F. L., Jr., & McCluskey, L. The class size/quality of educational process relationship (Update report III). Metropolitan School Study Council, N. Y.: 1976. (ERIC Document Reproduction Service No. ED 126 210)

Soar, R. S. Follow Through classroom process measurement and pupil growth, 1970-71 (Final report). Gainesville: Florida State University, Gainesville Institute for Development of Human Resources, 1973. (ERIC Document Reproduction Service No. ED 106 297)

Spearritt, D. Listening comprehension: A factorial analysis. Melbourne, Australia: Australian Council for Educational Research, 1962.

Stallings, J. A. Follow Through program classroom observation evaluation 1971-1972. Menlo Park, Calif.: Stanford Research Institute, 1973. (ERIC Document Reproduction Service No. ED 085 100)

Stallings, J. A. Follow Through classroom observation evaluation, 1972-1973: Executive summary (SRI Project URU-7370). Menlo Park, Calif.: Stanford Research Institute, 1974. (ERIC Document Reproduction Service No. ED 104 970)

Stallings, J. A., & Kaskowitz, D. H. Follow Through classroom observation evaluation, 1972-1973 (SRI Project URU-7370). Menlo Park, Calif.: Stanford Research Institute, 1974. (ERIC Document Reproduction Service No. ED 104 969)

Stennett, R. G. Class size: Confrontation or constructive compromise? Speech given before the annual conference of the Ontario Educational Research Council, New York, 1973. (ERIC Document Reproduction Service No. ED 087 099)

Stephens, J. M. The process of schooling: A psychological examination. New York: Holt, Rinehart & Winston, 1967.

Stewig, J. W. Drama: Integral part of the language arts. Elementary English, 1974, 51, 66-67. (a)

Stewig, J. W. Exploring language with children. Columbus, Ohio: Charles E. Merrill Publishing, 1974. (b)

Strickland, R. G. The language of elementary school children: Its relationship to the language of reading textbooks and the quality of reading of selected children. Bulletin of School of Education, Indiana University, 1962, 38 (4), 1962.

Thorlacius, J. M. Relationship between aide utilization and selected characteristics of teachers and aides (Doctoral dissertation, University of Oregon, 1969). Dissertation Abstracts International, 1970, 31, 988A-989A. (University Microfilms No. 70-15, 361)

Tiedt, I. M. Input. Elementary English, 1974, 51, 757.

Tikunoff, W., Berliner, D., & Rist, R. Special study A: An ethnographic study of the forty classrooms of the Beginning Teacher Evaluation Study known sample (Technical report 75-10-5). San Francisco: Far West Laboratory for Educational Research and Development, 1975. (ERIC Document Reproduction Service No. ED 150 110)

Travers, R. (Ed.). Second handbook of research on teaching. Chicago: Rand McNally, 1973.

Vincent, W. S. Class size. In R. L. Ebel (Ed.), Encyclopedia of educational research (4th ed.). New York: Macmillan, 1969.

Vygotskii, L. S. [Thought and language] (E. Hanfmann and G. Yaker, Eds. and trans.). Cambridge, Mass.: M. I. T. Press, 1962.

Wallen, N. E., & Travers, N. W. Analysis and investigation of teaching methods. In N. L. Gage (Ed.), Handbook of research on teaching. Chicago: Rand McNally, 1963.

Ward, B. A., & Tikunoff, W. J. Utilizing non-teachers in the instructional process. In D. L. Duke (Ed.), Classroom management, National Society for the Study of Education Yearbook. Chicago: University of Chicago Press, 1979.

Ward, W. Playmaking with children (2nd ed.). Englewood Cliffs, N. J.: Prentice-Hall, 1957.

White, S. J. The impact of paid instructional aides on time allocations for teaching activities in the multi-unit elementary school (Doctoral dissertation, University of Wisconsin, 1974). Dissertation Abstracts International, 1974, 35, 2618 A. (University Microfilms No. 74-19, 366)

Wiley, D. E. Another hour, another day: Quantity of schooling, a potent path for policy. In W. H. Sewell, R. M. Hauser, & D. L. Featherman (Eds.), Schooling and achievement in American society. New York: Academic Press, 1976.

Willems, A. L., & Willems, K. D. What should be the role of elementary school classroom aides? Education, 1973, 167, 122-126.

Wilkinson, A. M., & Stratta, L. A test of listening comprehension. Educational Review, 1970, 22, 3.

APPENDIX A

COST ANALYSIS OF REDUCING CLASS SIZE AS CONTRASTED WITH THE USE OF AIDES

Calculation for Approximate Cost of Having an Aide in Each Kindergarten Through Third-grade Self-contained Classroom:

No. of K-3 Classrooms:		Ave. Salary for Aides:		Approx. Cost of Having an Aide in Each K-3 Classroom:
12,346*	X	$5,150	=	$63,633,400

Calculation for Approximate Cost of Having the Class Size in Each Kindergarten Through Third-grade Self-contained Classroom:

No. of K-3 Students:		No. of Proposed Students in Each K-3 Classroom:		No. of Teachers Needed to Man Classrooms with the Ave. Class Size of Approx. 15 students:
306,773	X	15	=	20,451

No. of Teachers Needed to Man Classrooms with the Ave. Class Size of Approx. 15 Students:		No. of Teachers Actually Used to Man K-3 Classrooms with the Ave. Class Size of 24.82 Students		No. of Additional Teachers Needed to Reduce Ave. Class Size from 24.82 Students to 15 Students
20,451	-	12,356	=	8,095

No. of Additional Teachers Needed to reduce Ave. Class Size from 24.82 Students to 15 Students:		Ave. Salary for Teachers		Approx. Cost of Having Additional Teachers to Man Additional Classrooms
8,095	X	$14,117	=	$114,277,115

Calculation for Difference in Approximate Cost in Using Reduced Class Size as Opposed to Teacher Aides to Lower Adult-Student Ratios

Approx. Cost of Having Additional Teachers to Man Classrooms with the Ave. Class Size of 15 Students		Approx. Cost of Having an Aide in Each K-3 Classroom		Difference in Approximate Cost
$114,277,115	-	$63,633,400	=	$50,643,715

*All figures pertain to the 1979-1980 school year in North Carolina (Hill, Note 1).

APPENDIX B

SAMPLE INTRODUCTORY LETTER REQUESTING PERMISSION TO CONDUCT STUDY IN A SCHOOL SYSTEM

1603 Bolingbroke Road
High Point, North Carolina 27260
December 3, 1979

Dear _____:

As a part of my graduate studies at the University of North Carolina at Greensboro, I am presently conducting research which involves observing and comparing teaching behaviors of Primary Reading teachers and non-Primary Reading teachers. I would very much like to include in my study primary teachers from the _____ School System.

Enclosed is the proposal for my dissertation study. It includes a description of the study, the proposed observation instrument, a statement of the ethical principles to be followed in the study, a statement of the anticipated value of the study, and samples of preliminary forms to be completed by the participants.

I do not mind your sharing this proposal with the principals of the schools that this proposal might concern. However, please ask these principals <u>not to share the contents of the proposal with the teachers who might participate</u>.

If I may conduct part of my study in your school system, I will need to make paired observations within each school that agrees. For example, if permission is given to observe in a PR second-grade classroom, I will need to observe in a non-PR second-grade classroom in the same school. Also, I would prefer to observe teachers who are above average in teaching ability and who have more than one year's teaching experience.

Hopefully, observations will be underway by the middle of January, 1980. I would very much like to include _____ teachers in my sample. If you have any questions, I will be most happy to respond.

Yours truly,

Lou Wilson Kasias

APPENDIX C

STUDY PROPOSAL SENT TO PROSPECTIVE SCHOOL SYSTEMS

1. Description of the Study
2. Observation Instrument
3. A Statement of Ethical Principles Used in Conducting Study
4. The Anticipated Value to the School Systems and Participants
5. Consent Form
6. Forms for Background Information for Placing Observations in Context

A COMPARISON OF THE UTILIZATION OF LANGUAGE ARTS INSTRUCTIONAL TIME FOR TEACHERS WITH AIDES AND TEACHERS WITHOUT AIDES

The public and school officials are increasingly holding teachers accountable for the success rate of pupil achievement. They cite the millions of dollars spent in providing facilities, hardware, materials, supplies, and additional school personnel to help teachers teach and pupils learn. Opinions abound concerning what teachers should do in order to provide quality education. Yet, teachers have received very little consistent guidance from education researchers in identifying specific teaching behaviors which may result in improving pupil achievement.

However, within the past seven years, a knowledge base concerning linkages between teacher behavior and pupil achievement has emerged. Among the studies which have contributed to this base is a large scale field correlational study called the Beginning Teacher Evaluation Study (BTES). After developing a model of instruction, the BTES collected data to test the potency of the model. Through observations of second and third grade reading and mathematics classes, the researchers found that the most important influence upon pupil learning was Academic Learning Time (ALT), the amount of time pupils were engaged in a learning activity while performing at a high rate of success. Moreover, certain teacher behaviors were identified as being positively influential in affecting ALT. Those teachers who provided more substantive interaction, provided more monitoring of academic activities, provided more feedback, and responded less frequently to pupils having trouble with assignments were the teachers whose pupils had higher engagement rates and achieved more (Fisher, Berliner, Filby, Marliave, Cahen, Dishaw, and Moore, 1978). Other studies which lend support to the belief that the more teachers teach and interact with students the more students learn include studies by Brophy and Evertson (1974), Stallings (1974), and Durkin (1979)

Those schools and programs which have sought to increase pupil achievement by lowering teacher-pupil ratios or by providing teachers with classroom aides have increased the potentiality of more teacher-pupil interaction, monitoring, and feedback. Whether teachers are indeed taking advantage of this potential is questionable. The

present study uses the BTES findings as a major guideline for identifying and comparing teacher behaviors in classrooms with aide assistance and in classrooms without aide assistance.

By the 1980-1981 school year, all of North Carolina's primary classrooms are to be participating in the state's Primary Reading Program (PRP). This program uses teacher aides, volunteers, comprehensive planning, increased supplies and materials, increased inservice training in reading practices, and increased diagnostic information to improve classroom reading programs in grades one through three.

The major purpose of this study is to compare the utilization of teacher time in Primary Reading (PR) classrooms and non-Primary Reading (non-PR) classrooms. PR and non-PR teachers are compared as to how much time they spend engaged in noninstructional, monitorial, and instructional activities. Comparisons are made concerning the amount of instructional time spent in different aspects of the language arts with more specific comparisons in areas of reading instruction. Once instructional behavior is identified, it is classified as teaching, assessing, assigning, or helping with assignments. The frequencies of each of these classified instructional behaviors are compared with the other, and then their frequency proportions are used in comparing PR teachers with non-PR teachers. Finally, comparisons are made as to the amount of individual, small group, and large group attention directed toward students in PR classrooms and non-PR classrooms.

Since teacher aides are to perform many menial tasks once performed by teachers, their utilization should increase the teachers' actual instructional contact time with pupils and decrease the amount of time teachers spend performing noninstructional and monitorial duties. If the utilization of aides has no effect on or decreases the amount of teachers' actual instructional contact time with pupils and, in fact, increases the amount of time teachers spend performing noninstructional and monitorial duties, these teachers and aides need to reassess their roles.

However, an increase in the amount of instructional time does not necessarily mean an increase in the amount of substantive interaction between pupil and teacher. Teaching, assessing, assigning, and helping with assignments are all necessary components of an instructional

program; yet, teaching as evidenced by structured presentations of or structured guidance toward concepts to be learned, clarified, or practiced will be considered prime utilization of instructional time. If the presence of aides is related to a decrease in the quantity of time spent in assessing, assigning, and helping with assignments with an increase in time spent teaching, then more substantive interaction is occurring and teachers have increased their potential in affecting pupil learning. If the presence of aides is related to no change or an increase in the quantity of time spent in assessing, assigning, and helping with assignments with no change or a decrease in the time spent in teaching, teachers will need to re-examine their teaching behaviors and pupils' achievements and consider whether they need to change these teaching behaviors.

Included with the comparisons will be examples of when teachers could have possibly increased their productivity by providing more substantive interaction than was observed. Using observation data, suggestions will be provided as to how aides were best utilized.

The following page contains the observation checklist to be used in the study:

Teacher _____ Class size ___ Grade ___ Date _____

TEACHER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Noninstructional duties															
Monitorial duties															
Instructional duties															
Reading															
Word identification															
Teaching															
Assessing															
Assigning															
Helping with assignments															
Word meaning															
Teaching															
Assessing															
Assigning															
Helping with assignments															
Oral reading															
Silent reading															
Text comprehension															
Teaching															
Assessing															
Assigning															
Helping with assignments															
Study skills															
Teaching															
Assessing															
Assigning															
Helping with assignments															
Other language arts															
Oracy															
Teaching															
Assessing															
Assigning															
Helping with assignments															
Writing															
Teaching															
Assessing															
Assigning															
Helping with assignments															
Spelling															
Teaching															
Assessing															
Assigning															
Helping with assignments															
Handwriting															
Teaching															
Assessing															
Assigning															
Helping with assignments															
Non-language arts															
Uncodeable activity															

AIDE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Noninstructional duties															
Monitorial duties															
Instructional duties															
Reading															
Other language arts															
Non-language arts															
Uncodeable activity															

I - Individual S - Small group L - Large group

Observer _____

Study Procedures

Eighty observations will be made in forty first, second, and third grade classrooms in schools located in the Central Piedmont section of North Carolina. Twenty of these classrooms will be part of the PRP and each will consist of a teacher and a fulltime classroom aide. Twenty other classrooms will not be a part of the PRP and each will not have the services of a classroom aide. Observations will be made beginning with the opening of the school day since this is a time period normally set aside for the language arts. Each class will be observed for two ninety-minute periods. According to specified categories, teacher performance will be coded at the end of each minute. The first coding of aide performance will be made following the first thirty seconds of observation. The remaining codings will follow in sixty-second intervals. Hence, coding will alternate every thirty seconds from teacher performance to aide performance. Fifteen minute coding segments will alternate with ten-minute segments used for anecdotal writing and clarification until the total ninety-minute observational period is consumed. At the conclusion of one observational period, both teacher and aide behavior will have been coded sixty times each.

Observations will be made by this researcher and assistants. Prior to making the eighty required observations, this researcher and assistants will discuss the definitions of terms used in the recording instrument, will check the validity of the instrument through trial observations, and will check the reliability of the observations of each through two paired trial observations.

PR classrooms and non-PR classrooms will be made comparable by requesting that cooperating schools permit observations in both a PR classroom and a non-PR classroom which are on the same grade level. Each observer will equalize the days of the week that they observe in PR and non-PR classrooms. This investigator will request that all teachers to be observed will have at least one year's teaching experience and be considered above average in ability to teach and manage a classroom. (The description "above average" is a subjective description which will possibly be interpreted differently by each official who suggests teachers to be observed. Yet, it is used to discourage school officials from purposely suggesting weak teachers and to enable this investigator to reassure

teachers that they were suggested because some school officials had positive opinions toward their abilities.) For descriptive purposes information will be gathered concerning teachers' educational background and number of years of teaching experience. Similarly, aides will be asked their educational backgrounds and the number of years of aideing experience. Both will be asked how much assistance they have received in developing their roles as teacher and aide teams. Also, each teacher will be asked to describe briefly his or her language arts program by explaining which reading approaches and organizational strategies he or she uses. Moreover, each teacher will be asked to classify the socioeconomic status of his or her class since this information can be helpful in qualifying some suggestions based on research findings.

Through a two-sample t test statistical analysis of the codings in the checklist categories, the following null hypotheses will be tested at the 5% significance level:

1. No significant differences exist between teachers with and without aides in the utilization of time.

2. No significant differences exist between teachers with and without aides in the proportion of teacher instructional time spent on reading, oracy, writing, spelling, and handwriting.

3. No significant differences exist between teachers with and without aides in the proportion of reading instructional time spent on word identification, word meaning, oral reading, silent reading, text comprehension, and study skills.

4. No significant differences exist between teachers with and without aides in the proportion of language arts instructional time spent teaching, assessing, assigning, and helping with assignments.

5. No significant differences exist between teachers with and without aides in the proportion of time spent in direct involvement with individual students, small groups of students, and large groups of students.

6. No significant differences exist between classrooms which have teachers with aides and classrooms which have teachers without aides in the total amount of human resource time given to individual students, small groups of students, and large groups of students.

References

Brophy, J. E., & Evertson, C. M. Process-product correlation in the Texas effectiveness study: Final report. Austin, Tex.: University of Texas, June 1974. (ERIC Document Reproduction Service No. ED 091 394)

Durkin, D. What classroom observations reveal about reading comprehension. Reading Research Quarterly, 1978-1979, 14, 481-533.

Fisher, C. W., Berliner, D. C., Filby, N. N., Marliave, R., Cahen, L. S., Dishaw, M. M., & Moore, J. E. Teaching and learning in the elementary school: A summary of the Beginning Teacher Evaluation Study. San Francisco: Far West Laboratory for Educational Research and Development, September 1978. (ERIC Document Reproduction Service No. ED 165 322)

Stallings, J. A. Follow Through classroom observation evaluation 1972-1973 (SRI Project URU-7370): Executive summary. Menlo Park, Calif.: Stanford Research Institute, October 1974. (ERIC Document Reproduction Service No. ED 104 970)

A Statement of Ethical Principles Used in Conducting Study

The source for the subjects of this study will be in the school systems in the Central Piedmont section of North Carolina. These school systems are presently being contacted. Whether or not other school systems are asked to participate will be dependent upon the responses of these school systems.

The sample for this study will include twenty Primary Reading Program (PRP) teachers with aides and twenty primary teachers without aides. School administrative staffs are to ask school principles to seek out primary teachers and aides who will agree to participate. Written permission will be obtained from participating teachers and aides since their performance will be evaluated. They will be given the opportunity to refuse and to withdraw at any point. Since pupil performance will not be assessed, parental permission will not be sought.

Prior to the observations, the teachers and aides will meet with the investigator. They will be told the following: This is a comparative study of the performances of teachers with aides and teachers without aides. The main purpose of the study is to gain specific information as to how effective the presence of aides is in helping teachers perform more effectively. Aide activity will be monitored; however, more effort will be centered on observing teacher utility of time. The twenty teachers without aides will act as a control group and will provide a reference point for the observers and for the study's conclusions. All participants are assured that absolutely no one other than the observers and the individual participants will see the individual results of the checklists. Only cumulative and collective results from all participants will be shared with administrative staffs and others. Moreover, no school system will be compared with another school system since this is not the purpose of this study and the number of observations in each system would be too limited for a reliable comparison.

Participants will not be told prior to the observation what specific behaviors will be checked on the list. Ambiguity will be needed in order to avoid having teachers

purposely perform to meet the more desirable behaviors listed on the checklist. Such conformity would make the study invalid.

Debriefing sessions will be held in April and May. The investigator will return to each school participating in the study and meet with the participants. Teachers will be given a percentage breakdown of the observer's assessment of their time utilization. Aides will be given a percentage breakdown of their time utilization as assessed by the observer. This information will be considered personal and will be distributed directly to the person being assessed. This investigator will leave the decision to the teacher/aide teams as to whether they would like to look at each other's assessments. Individual assessments will not be discussed before the group. Each criterion on the checklist will be defined and explained. Subjects will be assured that it is well understood that the performances observed in some classrooms may have been atypical. Yet, with a total of eighty ninety-minute observations, the margin of error for an overall appraisal should be relatively low. The total findings will be explained, and conclusions will be discussed. Subjects wishing to discuss their individual assessments with this investigator or assistants will be given a private opportunity for discussion. Information from each participant will be kept confidential. Whenever anecdotes are given for further explanation, anonymity will be maintained.

In order not to misinform, this investigator will provide school officials just an assessment of the total findings. The only information discussed concerning individuals and school units will be between this investigator and assistants. Each will observe separately but will confer frequently in order to maintain consistency and to clarify confusion. Comparability between the three will be assessed before the study begins. This investigator will observe with each assistant and compare her tallies with the assistant's tallies. A reliability coefficient will be found concerning the comparability of these tallies.

The Anticipated Value to the School Systems and Participants

Each school system will have direct access to a study which describes and compares the utility of teacher and aide time during the language arts period. This information

can be used to guide teachers toward better utilization of their own time. Having aides in most primary classrooms is expensive. Their actual value to the quality of education needs to be assessed. This study can be a part of that assessment and lead to more productive inservice training for both aides and teachers. At a debriefing session each participant will be provided a percentage breakdown of the observer's assessment of that individual's performance during the observation period. This information will help each individual reflect and reassess his or her utilization of time. Such personal reflection is usually helpful and leads to a more productive individual.

Consent Form

Date: _____

I, _____, give permission to Lou Wilson Kasias or one of her assistants to observe in my classroom. I have been informed that these observations will be used in a comparative study of teacher activity in Primary Reading classrooms and non-Primary Reading classrooms. I have been informed that no one other than the observer, Mrs. Kasias, and those teachers and aides participating in the study will see the individual results of the collected data. No teacher or aide will see another's observational checklist unless the one to whom it pertains chooses to show it. Only cumulative and collective results from all participants will be shared with administrative staffs and others. I have been assured that whenever descriptive anecdotes are used anonymity will be maintained. I have been told that a debriefing session will be held in order for me to learn the results of the investigation. I understand that I may decline to participate in this research or I may discontinue participation at any time.

_____
Signature of Participating Teacher

_____
Signature of Participating Aide

_____
Signature of Research Director

Background Information for Placing Observations in Context

Teacher's Name: _____

Last Educational Degree as of Jan. 1, 1980: _____

Years of Teaching Experience as of Sept. 1, 1979: _____

Class size _____ Grade level _____

Overall at what socioeconomic status would you rate your class (e.g., low? middle? high? an equal mixture?)? _____

*If you are in the Primary Reading Program (PRP), which year is this for you in the PRP? _____

*As a Primary Reading teacher, how many Primary Reading inservice workshops have you attended? _____ Have you found these workshops helpful or not? _____ Please explain. _____

*What topic(s) would you like covered in future workshops?

In order for the observer to appreciate your instructional program, please describe it in a paragraph. Refer to the reading approach(es) that you use (e.g., basal reader, language experience, programmed, or individualized), and if you are using a supplementary program along with your major approach, please state this. Explain how you organize for instruction (e.g., number of reading groups and other interest or ability groups). If there is anything you feel should be explained to an observer in order for that observer to understand the way you teach and organize for teaching, include this information in the paragraph.

*Applicable to Primary Reading teachers

Background Information for Placing
Observations in Contest

Aide's Name: _____

Last Educational Degree as of January 1, 1980: _____

Years of Aideing Experience as of September 1, 1979: _____

As a Primary Reading aide, how many Primary Reading inservice workshops have you attended? _____ Have you found these workshops helpful or not? _____ Please explain. _____

_____

_____

_____

What topic(s) would you like covered in future workshops?

_____

_____

In order for the observer to appreciate your role in the classroom during the language arts instructional period, please briefly describe what you do.

_____

_____

_____

_____

APPENDIX D

TABLES CONCERNING DEMOGRAPHIC INFORMATION OF AREA OF SCHOOLS IN STUDY

Table A

1980 Population and 1977 Per Capita Income of Counties and Towns of School Systems Used in Study

Counties & Towns	Population[a]	Per Capita Income[b]
County A	98,964	$5,316
County B	112,618	4,995
County C	314,839	6,000
County D	91,187	5,098
Town 1 (Located in County A)	36,964	6,047
Town 2 (Located in County B)	13,995	4,881
Town 3 (Located in County C)	154,763	6,301
Town 4 (Located in County C)	63,169	5,488
Town 5 (Located in County D)	2,140	4,631
State	5,874,429	4,876
Country	226,504,825	$5,751

[a]Note. The data in this column are from the computer files concerning preliminary census findings of the United States Bureau of the Census.

[b]Note. The data in this column are from the United States Bureau of the Census, 1977.

Table B

1977 Insured Employment by Broad Industry Groups for State and for Counties Used in Study

Area	Total Employment	Construction Employment	Manufacturing	Transportation, Communication, & Utilities
State	1,753,246	109,291	779,455	97,481
County A	34,143	1,356	19,112	1,314
County B	32,683	1,287	22,672	939
County C	145,034	9,031	58,237	6,581
County D	28,880	1,186	20,822	800
Total Employment for 4 Counties	240,740	12,860	120,843	9,634
%ages of State Totals for 4 Counties	13.7%	11.8%	15.5%	9.9%

Note: Selected data taken from North Carolina Department of Administration, 1979, pp. 312-313.

Table B (continued)

Area	Trade	Finance Insurance, & Real Estate	Service	Others
State	425,673	83,421	245,547	12,378
County A	7,604	1,076	3,636	45
County B	4,906	584	2,242	53
County C	40,380	9,046	21,455	304
County D	3,675	397	1,869	131
Total Employment for 4 Counties	56,565	11,103	29,202	533
%ages of State Totals for 4 Counties	13.9%	28.9%	11.9%	4.3%

Table C

1976 Rate of Unemployment in State and Counties Used in the Study

Geographic Area	Rate of Unemployment
State	6.2
County A	8.9
County B	5.9
County C	5.5
County D	5.9
Average Rate of Unemployment of Four Counties	6.6

Note: Data from North Carolina Department of Administration, 1978.

APPENDIX E

TABLE OF NONWHITE-WHITE RATIOS OF SCHOOL SYSTEMS IN STUDY

Table D

NONWHITE-WHITE RATIOS OF SCHOOL SYSTEMS AND STATE IN STUDY

School System	Number of Nonwhites	Number of Whites
A	2,447	5,413
B	12,130	13,320
C	4,342	5,474
D	1,208	1,798
E	4,324	21,215
F	1,065	12,906
Total	25,516	60,126
State Total	368,189	786,372

Note. The data in this table are from North Carolina Department of Public Education, Division of Statistical Services, 1980

APPENDIX F

TABLES OF 1978-1979 TEST RESULTS OF FIRST, SECOND, AND THIRD GRADERS IN SCHOOLS SYSTEMS USED IN THE STUDY

Table E

1978-1979 First-Grade Achievement Scores of School Systems in Study

School System and Number Taking Test in Each[a]		Sound Discrimination	Sound Meaning	Visual Reasoning	Sound-Symbol Correspondences	Oral Language	Literal Comprehension
A (N=592)	% Achieving	61	74	76	60	70	43
	% Needing Review	32	16	19	28	27	32
	% Not Achieving	7	9	5	11	3	25
B (N=1752)	% Achieving	59	67	56	42	56	34
	% Needing Review	33	16	31	30	32	32
	% Not Achieving	8	16	12	28	11	34
C (N=722)	% Achieving	46	59	36	34	51	28
	% Needing Review	39	19	40	29	34	29
	% Not Achieving	14	22	23	37	15	44
D (N=235)	% Achieving	60	66	50	40	46	34
	% Needing Review	34	18	33	28	40	26
	% Not Achieving	7	16	17	32	14	40
E (N=1894)	% Achieving	69	80	63	54	71	49
	% Needing Review	27	12	29	31	24	30
	% Not Achieving	4	9	8	15	5	21
F (N=1087	% Achieving	53	74	53	36	57	30
	% Needing Review	40	16	36	38	36	40
	% Not Achieving	7	10	11	26	7	30

Note. From North Carolina Department of Public Instruction, 1979. Scores obtained by Prescriptive Reading Inventory, Level II, 1976.

[a]Total Average State Grade Equivalency Score = 1.8 (N. C. Department of Public Instruction, Division of Research, 1979b, p. 5).

Table E (continued)

School System and Number Taking Test in Each		Interpretive Comprehension	Attention Skills	Sight Vocabulary	Initial Reading	Estimated Achievement Scale Score	Estimated Achievement G. E.	National Percentile	Stanine
A	% Achieving	24	70	40	54				
(N=592)	% Needing Review	27	27	40	30	330	2.1	73	6
	% Not Achieving	48	3	19	16				
B	% Achieving	24	50	41	49				
(N=1752)	% Needing Review	23	43	32	26	317	1.8	61	6
	% Not Achieving	53	7	28	25				
C	% Achieving	16	48	33	37				
(N=722)	% Needing Review	22	46	32	29	305	1.7	50	5
	% Not Achieving	62	7	35	34				
D	% Achieving	24	54	34	35				
(N=235)	% Needing Review	20	44	31	22	312	1.8	56	5
	% Not Achieving	57	2	34	43				
E	% Achieving	27	65	54	59				
(N=1894)	% Needing Review	28	32	30	26	334	2.2	76	6
	% Not Achieving	45	3	16	15				
F	% Achieving	19	54	36	45				
(N=1087)	% Needing Review	27	41	39	32	318	1.8	62	6
	% Not Achieving	55	5	25	23				

Table F

1978-1979 Second Grade Achievement Scores of School Systems in Study

School System and Number Taking Test in Each		Recognize Vowel Sounds	Consonant Substitution	Syllables	Word Endings	Parts of Speech	Word Structure	Subjects and Predicates
A	% Achieving	87	92	70	89	87	99	89
(N=618	% Needing Review	12	7	28	8	11	1	8
	% Not Achieving	1	1	1	3	2	0	3
B	% Achieving	75	79	55	78	77	93	76
(N=2023)	% Needing Review	20	16	41	14	17	5	14
	% Not Achieving	5	4	3	8	6	2	10
C	% Achieving	68	75	57	76	71	92	73
(N=736	% Needing Review	25	20	39	13	24	7	15
	% Not Achieving	7	5	4	10	5	2	12
D	% Achieving	82	83	72	86	78	94	80
(N=196	% Needing Review	15	11	27	10	19	5	13
	% Not Achieving	3	6	1	4	3	1	7
E	% Achieving	80	87	65	87	84	97	84
(N=1983)	% Needing Review	17	11	33	10	14	3	11
	% Not Achieving	3	2	3	4	2	1	5
F	% Achieving	78	83	58	85	80	96	83
(N=1115)	% Needing Review	19	15	39	12	17	3	12
	% Not Achieving	3	2	3	3	3	1	5

Note. From North Carolina Department of Public Instruction, 1979. Scores obtained by Prescriptive Reading Inventory, Level A, 1972.

[a]Total Average State Grade Equivalency Score = 3.0 (N. C. Department of Public Instruction, Division of Research, 1979b, p. 5).

Table F (continued)

School System and Number Taking Test in Each		Word Meanings	Sentence Completion	Sentence Meaning	Literal Comprehension	Logical Thinking	Character Analysis	Interpretive Comprehension	Applied Comprehension	Estimated Achievement Scale Score	G. E.	National Percentile	Stanine
A	% Achieving	93	94	98	71	62	90	89	82				
(N=618)	% Needing Review	6	6	2	25	33	7	9	15	389	3.4	70	6
	% Not Achieving	1	0	0	4	5	3	1	3				
B	% Achieving	80	80	90	57	51	83	77	71				
(N=2023)	% Needing Review	15	15	6	32	36	12	15	20	372	3.0	58	5
	% Not Achieving	5	4	3	11	14	5	8	9				
C	% Achieving	73	80	88	51	43	75	74	63				
(N=736)	% Needing Review	19	15	7	38	40	16	17	24	364	2.8	52	5
	% Not Achieving	8	4	5	12	17	9	10	13				
D	% Achieving	82	88	93	56	49	80	77	74				
(N=196)	% Needing Review	14	10	4	36	40	15	19	18	380	3.2	64	6
	% Not Achieving	4	2	3	8	11	5	5	8				
E	% Achieving	90	88	95	67	60	90	86	81				
(N=1983)	% Needing Review	8	9	4	27	33	8	10	14	386	3.4	66	6
	% Not Achieving	2	2	1	6	7	2	4	4				
F	% Achieving	88	84	95	62	53	84	84	75				
(N=1115)	% Needing Review	10	13	4	32	37	12	12	18	378	3.2	62	6
	% Not Achieving	2	3	1	6	10	3	4	6				

Table G

1978-1979 Third Grade Achievement Scores of School Systems in Study

School System and Number Taking Test in Each	Reading								Total[a] Reading			
	Phonic Anal.		Struc. Anal.		Voc.		Compre.					
	Scale Score	National Percentile	Scale Score	National Percentile	Scale Score	National Percentile	Scale Score	National Percentile	Scale Score	Grade Equivalent	National Percentile	Stanine
A (N=594)	426	68	433	72	421	58	436	60	428	4.3	68	6
B (N=1997)	392	44	398	49	400	43	414	46	394	3.5	45	5
C (N=838)	397	48	397	48	392	38	411	44	392	3.5	43	4
D (N=225)	417	62	432	71	411	51	423	52	414	4.0	59	5
E (N=2153)	401	51	411	57	409	50	425	53	405	3.8	53	5
F (N=1104)	394	46	407	55	405	47	421	50	399	3.7	48	5

Note. From North Carolina Department of Public Instruction, Division of Research, 1979b. Scores obtained by California Achievement Test, Level 13 C, 1977.

Total Average State Grade Equivalency Score in reading[a] =3.7, in spelling[c] = 4.0, in language[c] = 3.9

Table G (continued)

School System and Number Taking Test in Each	Spelling[b]				Language				Total[c] Language			
					Mech		Express.					
	Scale Score	Grade Equivalent	National Percentile	Stanine	Scale Score	National Percentile	Scale Score	National Percentile	Scale Score	Grade Equivalent	National Percentile	Stanine
A (N=594)	489	5.0	71	6	497	72	468	60	478	4.6	70	6
B (N=1997)	452	3.8	52	5	476	58	447	46	451	3.8	53	5
C (N=838)	445	3.6	48	5	469	53	436	40	441	3.6	47	5
D (N=225)	480	4.6	67	6	495	71	461	55	472	4.4	67	6
E (N=2153	468	4.2	60	6	483	63	457	53	461	4.1	60	6
F (N=1104)	458	3.9	55	5	487	66	454	51	461	4.1	60	6

APPENDIX G

SPECIFIC TESTS AND MATERIALS USED IN THE CLASSROOMS IN THE STUDY

Tests:

California Testing Bureau/McGraw Hill. California achievement tests (Level 13C). Monterey, Calif.: Author, 1977.

California Testing Bureau/McGraw-Hill. Prescriptive reading inventory (Level A). Monterey, Calif.: Author, 1976.

California Testing Bureau/McGraw-Hill. Prescriptive reading inventory (Level II). Monterey, Calif.: Author, 1972.

Specific Materials:

Adams, A. H. Success in beginning reading and writing: The basal concept of the future. Santa Monica, Calif.: Goodyear, 1978.

Psychotechnics. Accountability in primary reading education. Glenview, Ill.: Author, 1971.

Science Research Associates. SRA Reading Laboratory (Level IIa). Chicago, Ill.: Author, 1958.