A STUDY OF DIFFERENTIAL TEACHER BEHAVIOR
TOWARD HIGH, MIDDLE, AND LOW ACHIEVERS

A Master's Thesis
Presented to
The Faculty of the Department of Psychology
University of Wisconsin - La Crosse

Submitted in Partial Fulfillment
of the Requirements for the Degree
Master of Science in Education: School Psychology

by
Terry Jerome Smith
August 1978
UNIVERSITY OF WISCONSIN
La Crosse, Wisconsin 54601

COLLEGE OF EDUCATION

Candidate: Terry Jerome Smith

We recommend acceptance of this thesis in partial fulfillment of this candidate's requirements for the degree Master of Science in Education: School Psychology. The candidate has completed his oral report.

[Signatures and dates]

This thesis is approved for the College of Education.

Dean, College of Education

[Signature and date]
ABSTRACT

This study was undertaken to determine the extent of differential teacher behavior to high, middle, and low achieving students.

Twenty-four students in four heterogeneous fourth grade social studies classrooms from two La Crosse Area Public Schools were observed. Six students (two each from high, middle, and low) from each class were included.

Teacher-student interactions with high, middle, and low achieving students were assessed using an abbreviated version of the Brophy and Good (1970) Dyadic Interaction System.

Analyses of variances were performed on each observation category to assess achievement level effects, class effects, and the interaction of level and class. For each variable showing significant F ratios for achievement level, Duncan Multiple Comparison (Edwards, 1963) procedures were calculated.

Although results for total quantitative measures showed no significant differences in teacher contacts, individual quantitative measures showed significant differences in teacher behavior with respect to achievement level. High achievers received significantly ($p < .05$) more teacher initiated response opportunities and were asked significantly ($p < .01$) more direct questions than middle and low achievers. Results also indicated that high achievers were given significantly ($p < .05$) more reading turns than low achievers.
Qualitative findings for teacher initiated contacts showed only one significant ($p < .01$) difference between achievement groups. Teachers repeated questions more often for high achievers than low achievers.
ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to Dr. Robert E. Arthur, and Dr. James J. Ryan for their time, creative guidance, and assistance throughout the design and implementation of this thesis. Also, I wish to thank the other members of the committee: Dr. Libby Nesselroad, and Dr. Larry Cozad, for their helpful suggestions.

This project is dedicated to Jean Sveum, to whom I am indebted for supplying confidence and support at times when they were so desperately needed.

Special thanks to Judy for diligently typing this thesis.

I extend special thanks to the participating schools, and especially the teachers whom this project would not have been possible without.

Finally, I thank my parents, George and Georgia, for their support and understanding throughout my educational career.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>II. REVIEW OF THE LITERATURE</td>
<td>7</td>
</tr>
<tr>
<td>Summary</td>
<td>15</td>
</tr>
<tr>
<td>III. METHODOLOGY</td>
<td>17</td>
</tr>
<tr>
<td>Objectives</td>
<td>17</td>
</tr>
<tr>
<td>Subjects</td>
<td>18</td>
</tr>
<tr>
<td>Instrument</td>
<td>19</td>
</tr>
<tr>
<td>Procedure</td>
<td>24</td>
</tr>
<tr>
<td>Data Analysis</td>
<td>23</td>
</tr>
<tr>
<td>IV. RESULTS</td>
<td>26</td>
</tr>
<tr>
<td>V. DISCUSSION AND CONCLUSION</td>
<td>35</td>
</tr>
<tr>
<td>Conclusions and Suggestions for Future Research</td>
<td>38</td>
</tr>
<tr>
<td>REFERENCES</td>
<td>43</td>
</tr>
<tr>
<td>APPENDIX A</td>
<td>47</td>
</tr>
<tr>
<td>APPENDIX B</td>
<td>48</td>
</tr>
<tr>
<td>APPENDIX C</td>
<td>49</td>
</tr>
</tbody>
</table>
# TABLE OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PERCENT AGREEMENT BETWEEN OBSERVERS ON ALL MEASURES.</td>
<td>27</td>
</tr>
<tr>
<td>2. SUMMARY OF RESULTS OF ANALYSIS OF VARIANCE FOR TOTAL TEACHER INITIATED RESPONSE OPPORTUNITIES.</td>
<td>28</td>
</tr>
<tr>
<td>3. MEASURES WITH NONSIGNIFICANT F RATIOS FOR ACHIEVEMENT LEVEL EFFECTS.</td>
<td>30</td>
</tr>
<tr>
<td>4. MEASURES WITH SIGNIFICANT F RATIOS FOR ACHIEVEMENT LEVEL EFFECTS.</td>
<td>31</td>
</tr>
<tr>
<td>5. DUNCAN'S MULTIPLE RANGE TEST APPLIED TO THE DIFFERENCES BETWEEN THREE TREATMENT MEANS.</td>
<td>33</td>
</tr>
<tr>
<td>6. SUMMARY OF DIFFERENCES BETWEEN MEANS FOR ACHIEVEMENT LEVELS</td>
<td>34</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

In recent years the public school system in this country has been the subject of increasing criticism. Critics say that the schools are failing to educate children. They cite, among other issues, the high dropout rate in our nation's schools. Hamacheck (1972) provides some descriptive statistics on school failure. He states that roughly one third of the youngsters who enter first grade do not complete eleventh grade today. These students are more likely to: be boys than girls; come from lower class homes than middle or upper class homes; come from broken homes than intact families; and be low achievers than middle or high achievers (Brophy & Good, 1974).

The availability of this information notwithstanding, the patterns continue. These same groups of students experience continued frustration and failure in school. Despite considerable attention by educators to the problem of school failure, educational research has offered relatively few findings which can be applied to the improvement of educational practice. In addition, only limited research has focused on teacher-individual student interaction as a factor in school failure. Much of the research in the area of teacher-student interaction has investigated teacher-behavior towards the entire class.

Several student attributes have been found to influence teachers' interaction patterns with their students (Brophy & Good, 1974; Rubovits & Maehr, 1973; Rist, 1970). Student achievement is one of these attributes.
There is considerable evidence that suggests that students of different achievement levels have very different kinds of interactions with their teachers. Good (1970) found fourth grade teachers to differentially interact with students of different achievement levels. Significant differences were observed among groups of high, middle, and low achieving pupils. High achievers consistently received more response opportunities. Brophy and Good (1970) found that teachers systematically discriminated in favor of high achievers in demanding and reinforcing quality performance.

In earlier studies (Horne, 1914; deGroat & Thompson, 1949) it was also shown that teachers behave differentially toward certain students. In these studies, high-achieving students experienced different quantities of interactions with their teachers than their low achieving peers. High achievers received more praise, while lower achievers received a disproportionate share of disapproval. These studies also showed that higher achieving students received more opportunities to respond. The popular notion has been that higher-achieving students experience more frequent and positive teacher interactions than their middle and low achieving peers.

Much of the recent research on teacher-student interactions has been a response to Rosenthal and Jacobson's (1968) controversial Pygmalion in the Classroom. Rosenthal and Jacobson suggested that a teacher's expectation for a student affected the teacher's behavior toward that student, and ultimately altered the student's achievement. This study tested the proposition that within a given classroom those children from
whom the teacher expected greater intellectual growth would show such growth. Briefly, the teachers included in this research project were given incorrect data regarding the measured intelligence of the students involved in the study. Some students were reported to have more measured intelligence than was actually the case. Such students did, in fact, earn higher scores when retested, following their more positive experiences with teachers who expected them to perform at a higher level. Other students reflected teacher expectations for poorer performance. The measure of effect was an intelligence test administered at the beginning and end of the school year. Since significant differences were found between the experimental and control groups, they inferred that the teacher's expectations about a student's achievement potential resulted in their interacting differently toward the students. Brophy and Good (1970) suggest an explanation of causal mechanisms or chain of events that affect how teachers interact with their students:

a) The teacher forms different expectations for student performance.
b) The teacher then begins to treat the students differently in accordance with his/her different expectations.
c) The children respond differently to the teacher because they are being treated differently by him/her.
d) In responding to the teacher, each child tends to exhibit behavior which compliments and reinforces the teacher's particular expectations for him/her.
e) As a result, the general academic performance of some children
will be enhanced while that of others will be depressed, with changes being in the direction of teacher expectations.

f) These effects will show up in achievement tests given at the end of the year, providing support for the "self-fulfilling prophecy" notion.

The Rosenthal and Jacobson research has a number of methodological weaknesses. The study has been criticized on at least two crucial grounds: First, artificially inducing teacher expectation (i.e., providing teacher with inaccurate historical information about the students), and failure to collect behavioral interactional data in the classroom to clarify the ways in which teacher expectations affected the interaction (Elashoff, Dixon, & Snow, 1971; Mendles & Flanders, 1973; Barber & Silver, 1968). Although these methodological weaknesses create serious doubt about the accuracy of Rosenthal and Jacobson's findings, their study reflects a significant pioneering effort to uncover some of the teacher-student interactive dynamics.

Because of the inherent difficulties in artificially induced teacher expectations (i.e., by giving false information concerning particular students), recent research has investigated the relationship of natural teacher expectations to actual data-based teacher behavior within the classroom (Brophy & Good, 1970; Cornbleth, 1974; Alpert, 1974). In some studies (Brophy & Good, 1970; Cornbleth, 1974) the experimenter used the teacher's rank ordering of students in terms of ability or academic potential as a measure of teacher expectations. These investigators assumed that teachers would respond more positively toward
high expectancy students (i.e., high achievers) than toward low expectancy students (i.e., low achievers). These studies did suggest that teachers differently interact with different groups of students, however, replications of Brophy and Good's original study (Evertson, Brophy, & Good, 1973; Brophy, Evertson, & Harris, 1973; Evertson, Brophy, & Good, 1972) have failed to demonstrate different treatment of students. The results of the replication attempts may suggest that the pattern of teacher communication of expectancy is not universal.

Future research should examine teacher behavior as major variables that contribute to school failure. If teachers do interact differently with students of different achievement, it is conceivable that interaction is a significant variable in accounting for the continued failure of lower-achieving students and the continued success of higher achieving students. Knowledge of a possible effect of teacher interaction may influence teachers to examine their own teaching behavior with students of various achievement levels. In addition, this may suggest that efforts should be directed toward identifying and modifying the specific patterns which contribute to the continued failure of some children.

The proposed study will examine the relationship between behavior as it related to student achievement. The questions to be answered are:

1) Are there any differences in the qualities of interactions between teachers and high, middle, and low achievers?

2) Is there a difference in the quantity of teacher-initiated communications to or with high, middle, and low-achieving students?
3) Is there a difference in student initiated contacts with their teacher? Are these differences related to teacher initiated contact?

The major variables of concern will be the quantity and qualities of interactions teachers have with high, middle, and low achieving students.
CHAPTER II

REVIEW OF THE LITERATURE

Teachers play an important role in how children learn. There is a growing body of research which suggests that teachers create and extend differential interaction to students in the same classroom. Good and Brophy (1971) review a number of studies indicating that teacher-student interaction consistently varies with sex, social status, and achievement level of students. deGroat and Thompson (1949) reported that high achievers more frequently received teacher praise, while low achievers received a disproportionate share of teacher disapproval. Similarly, Hoehn (1954) reported that the low-achieving student received a greater proportion of conflictive and dominative teacher contacts, while high achieving students received more promotive and supportive contacts. The finding of Lahaderne and Jackson (1970) that the quality of teacher-student interaction varies with student achievement level is consistent with the previous findings of Hoehn and deGroat and Thompson. Good (1970) examined four first grade classrooms and reported not only more positive feedback, but also more opportunities to respond. Rowe (1969) reported that teachers waited significantly less time (before calling on someone else or giving the student the answer) for their more capable students. Thus, lows had to respond significantly more quickly than high-achieving students.

Researchers studying teacher-student interactions have focused on
the concept of "teacher expectations." Teacher expectations have been defined as, inferences teachers make about the present and future academic achievement and general classroom behavior of their students (Brophy & Good, 1973). Typically investigators have taken teacher ranking of students in order of achievement as a measure of "teacher expectation" for pupil achievement. The popular notion here is that, teacher's expectations influence student performance. This notion was advanced by Rosenthal and Jacobson's (1968) controversial study testing the self-fulfilling prophecy hypothesis. They found that achievement data taken at the end of the year were significantly affected by performance expectations induced in the teachers at the beginning of the year, and that the nature of the effects observed was consistent with the idea that teacher's expectations function as self-fulfilling prophecies. How are these so called expectations communicated in ordinary classroom settings? This is the question that investigators should be focusing on. However, rather than studying teacher behavior as it might relate to the communication of expectancies, researchers are speculating that student achievement is influenced by what the teacher expects of him.

In this review and the empirical investigation which will follow, differences in total frequency of teacher-initiated interactions are referred to as quantitative differences, and differences in the frequency of types of interactions are referred to as qualitative differences.

Studies reported are those using the Brophy and Good (1970) system as a measure of differential teacher behavior. Other criteria for in-
clusion were: (1) studies in which the teacher rank-ordered students in terms of achievement or expected achievement, and (2) studies which look at teacher behavior toward individual students.

The studies will be grouped into those which: (1) demonstrate quantitative and/or qualitative differential treatment favoring high achievers, (2) demonstrate quantitative and/or qualitative treatment favoring low achievers, and (3) those showing no differential treatment toward achievement groups.

**Brophy and Good Dyadic Interaction System**

Brophy and Good (1970) designed a scale which would allow for coding teacher behavior toward individual students. The system provides data for the following behavioral categories and coding distinctions: (1) Public response opportunities in which the student tries to answer questions posed by the teacher, (2) reading turns, in which the student reads aloud, (3) private work-related contacts, in which the teacher helps the student with seatwork or homework, (4) private procedural contacts which concerns supplies or other matters not directly related to classwork, and (5) behavioral evaluations in which the teacher singles out a student for praise or criticism of his classroom behavior. Each type of interaction is coded as it occurs, with interactions initiated by the teacher being recorded separately from those initiated by the student.

The level of response demand built in to teacher questions can be identified by five types of questions. Process questions, which require the student to explain the thinking and problem solving that underlies
an answer; product questions, which require the student to provide short factual information; opinion questions, requires the student to make a prediction or give an opinion regarding curriculum matter; choice questions, where a student selects from among alternative responses provided by the teacher or workbook; and self-reference questions, concerns the student's personal experiences or feelings. The quality of the student's response can be coded into one of four categories: (1) correct response, (2) incomplete or partially correct response, (3) incorrect responses, or (4) no response. Teacher feedback reactions following the student's responses can be coded into four categories: (1) praise, (2) criticism, (3) product feedback (i.e., gives right answer), (4) process feedback (i.e., gives cognitive or behavioral processes which must be gone through in order to arrive at the right answer), repetition of the questions, rephrasing the question or giving a clue, asking a new question, and failure to provide any feedback reaction at all.

Means and percentage scores can be computed to reflect the mean or percentage of times the teacher or students responds to a given measure. Analyses of variance can be used to determine differences among groups and correlations can be performed to assess the relationship among measures.

Studies Showing Differential Teacher Behavior Favoring High Achievers

In their observation of four first grade classrooms, Brophy and Good (1970) found only minor differences in quantity of teacher contact between high and low achieving students. However, sharp qualitative differences in teacher-student interaction were reported. Teachers
demanded better performance from high achievers and were more likely to praise good performance when it occurred. In contrast, teachers readily accepted poor performance from low-achieving students, and were less likely to praise their good performance. Moreover, when high achievers were unable to respond or responded incorrectly, the teacher was more likely to provide a second response opportunity (repeating or rephrasing the question or supplying a clue) than with low achievers in the same situation. Conversely, they were more likely to terminate the interaction (supplying the answer, calling on another student) when reacting to lows than to highs.

These results differ somewhat from an earlier study (Good, 1970) in which teachers called on high achievers much more frequently than low achievers. Quantitative differences in teacher interaction with high, middle, and low achievers were reported by Cornbleth, Davis, and Button (1974). Teachers in this study interacted more frequently with high achievers than with low achievers. High achievers were afforded more response opportunities and initiated significantly ($p < .05$) more contacts with their teachers than low achievers. Praise and criticism were infrequent (a finding not consistent studies investigating elementary grades), and differences between highs and lows were negligible.

Jeter and Davis (1973) provides the closest replication of the original Brophy and Good study. These researchers studied ten fourth grade social studies classes. They found that students ranked as low achievers received less total contact with their teachers - low achievers were also criticized more frequently when incorrect. Qualitative
findings also suggested that high achievers received more feedback to their answers and that teachers tended to stay with them more frequently after failure to give appropriate answers to initial questions. Non-significant trends suggested that teachers initiated more work-related interactions with lows, asked more questions following right answers and praised lows after correct answers more frequently than they praised the highs. Some of the qualitative differences found in this study are supportive of those found by Brophy and Good (1970).

Good, Sikes, and Brophy (1972) observed quantitative and qualitative group differences. Qualitative findings were mixed. Although teachers more often failed to give feedback to following responses by low achievers, they did stay with these students more often after they failed to answer an initial question. Quantitative results were especially striking. High achievers initiated more comments and questions, received more response opportunities, and generally initiated more contacts with their teachers. While most of the qualitative findings in this study are consistent with others (Brophy & Good, 1970), they are overshadowed by larger and more consistent quantitative findings.

The above quantitative results are consistent with a study (Mendoza, Brophy, & Good, 1972) involving four seventh grade junior high classrooms. The most significant differences were on quantitative measures. High and middle group students received more response opportunities than lows. Although high achievers initiated more contacts with their teachers, the teachers initiated more contacts with middle and low achievers. Thus, differences reported may be a result of student behavior rather than
inappropriate teaching.

Jeter (1972) observed quantitative and qualitative differences in teacher behavior in ten fourth grade classes. Results indicated that high achievers were given significantly more ($p < .01$) response opportunities and direct questions. Other variables indicated that while the teachers initiated significantly ($p < .01$) more work-related contacts with high achievers than with low achievers, these students (high achievers) also initiated significantly ($p < .01$) more work-related contacts than did low achievers.

Qualitative measures indicated that the teachers failed to give feedback significantly ($p < .05$) more when interacting with low achievers than high achievers. In addition, low achievers were criticized for academic work significantly ($p < .05$) more than high achievers.

**Studies Showing Differential Teacher Treatment Favoring Low Achievers**

While most of the studies reported in this review show differential teacher treatment favoring high achievers, several have indicated differential behavior favoring low achievers. Chapman and Larsen (1976) provide data which suggests that low achievers received more teacher-initiated contacts than did middle and high achievers. In addition, low-achieving students received more praise than high and middle achievers, however, no differences in teacher criticism. Results also suggested that low achievers initiated more contacts with their teachers.

Other studies (Weinstein, 1974) have reported that low achievers received more favorable teacher treatment. Low achievers were praised
more frequently than high achievers when correct following reading turns
despite poorer performance. It is also suggested that significantly
more criticism was directed toward the high-ability group. Furthermore,
the proportion of reading turns and acknowledged student responses
which occurred without feedback appeared to be higher for high achievers.
Overall, these results suggest that there is a tendency for teachers to
respond more positively toward lower-achieving students.

Bagley (1974) found low achievers to initiate more work-related
contacts. These students raised their hands to ask teachers about
assigned tasks and took their work up to the teacher's desk significantly
more often than did high achievers. The teachers generally interacted
equally with each achievement group, however they did initiate more
work-related contacts with low achievers.

Studies Showing No Differential Teacher Behavior

In a replication of the Brophy and Good (1970) study (Evertson,
Brophy, & Good, 1972) few of the findings from the initial study were
found. Analyses of key measures such as response opportunities, work-
related praise, teacher-initiated contacts, staying with a student after
his initial failure to respond correctly, and total feedback, revealed
that, only three of the nine teachers studied showed differential treat-
ment favoring high achievers, three showed no differential treatment,
and the remaining three showed differential treatment favoring low
achievers.

The finding of no differences in teacher behavior toward high and
low achievers has been reported (Alpert, 1974). Although his results
suggested a trend for low achievers to receive preferential treatment this did not reach significance. The findings in general indicated that teachers treated both groups equally. The finding that teachers spent as much time with each achievement group is consistent with others (Brophy & Good, 1970; Evertson, Brophy, & Good, 1973).

An important difference is noted between the Alpert Study and others reported in the literature. That is, this study is the only one (with the exception of Good, 1970) in which the observers were not aware of which students were high or low achievers. Knowledge of achievement levels may induce experimenter bias, which is likely to be reflected in the results.

Ross (1976) also reported no difference in teacher behavior toward high and low achievers. He observed simple materials (i.e., math, reading, social studies) effects, suggesting that the type of material or class most likely effected teacher initiator response opportunities and child initiated contacts.

Two other studies (Brophy, Evertson, Harris, & Good, 1972; 1973) found no differences in teacher behavior. Identical results in both studies suggested that two teachers favored high achievers over lows (mostly on quantitative measures). One teacher showed no differences at all, one showed a slight tendency to favor low achievers and, one mixed differences favoring highs in one class and lows in another class. However, none of these findings were significant.

Summary

The view of classroom teacher behavior provided by the studies re-
ported in this review is exceedingly narrow; however, it is sufficient to direct attention to important educational issues. While a majority of the studies report qualitative findings that support Brophy and Good's (1970) findings, it is important to consider those which have not found such results. Some studies have found large and consistent quantitative differences (a finding inconsistent with Brophy and Good). It should be kept in mind that there are tremendous differences between classrooms, this is one variable that may effect the results. In addition other plausible explanations for different results could be related to the time of the year in which the data are collected. It is possible that teachers interact differently with students at different times during the school year.

Some studies have looked at first grade classes in lower class urban settings (Brophy & Good, 1970). Others have investigated high school classrooms serving pupils from a wide range of socioeconomic backgrounds (Cornbleth et al., 1974). Still others have looked at fifth grade upper-middle-class rooms in predominately white schools (Brophy, Evertson, Harris, & Good, 1973).

Overall, some studies have shown no evidence of differential teacher behavior, some have found evidence in some teachers but no others, and some have found evidence of differential teacher behavior in each teacher included in the study.
CHAPTER III

METHODOLOGY

Objectives:

The specific hypotheses examined in this study included:

1. There are no differences in the quantity of teacher initiated communication to or with high, middle, and low achieving students. Quantity was measured by the following criteria:
   a) Response Opportunities - total of those below:
      1) Reading turns
      2) Work recitations
      3) Direct questions
      4) Discipline questions
   b) Work-related contacts - total of those below:
      1) Teacher initiated
   c) Work-related contacts - total of those below:
      1) Student initiated

2. There are no differences in the qualities of teacher initiated communications to or with high, middle, and low achieving. Quality was measured by the following criteria:
   a) Work-related Feedback - total of those below:
      1) Praise
      2) Criticism
      3) No feedback
4) Ask another
5) Repeat questions
6) Gives answer
7) Rephrase or gives clue

b) Behavior Evaluations - teacher initiated
   1) Praise
   2) Criticism

3. There are no differences in student initiated, work related communication to or with teachers on the part of high, middle, and low achieving students.

Subjects

Three teachers and twenty four students in four regular education fourth grade social studies classrooms in the La Crosse Area Public School System were selected as subjects in the following manner: The schools chosen represented heterogeneous achievement levels. Two student data sheets (Appendix A) were sent to the principals of two randomly selected La Crosse Area Public Schools. The principals asked three teachers to list the first names of twelve students whom the teacher perceived as four high achieving (two males and two females), four middle achieving (two males and two females), and four low achieving (two males and two females) in each class. Two fourth grade classes of the four represented in the sample were taught by the same teacher. Six of the
twelve sample students in each class served as target subjects for ob-
servation and six served as alternates for observation in the event of
absences of target subjects.

Instrument

An abbreviated version of the Dyadic Coding System (Brophy & Good,
1970) was used to measure teacher-pupil interaction. Selection in-
cluded deleting items not relevant to the purposes of the study. These
categories represent the complete scale without modifications. The
instrument has been modified in previous studies (Ross, 1976; Chapman,
Larsen & Parker, 1976). The Dyadic Coding System was designed to code
interclass and individual differences in teacher-child interaction
patterns in the classroom. This selection had the capacity to record
in excess of 150 specific categories of teacher-child interaction. One
unique characteristic of the instrument is that it provides data on
whether the teacher or child initiated the interaction. Seven different
types of interactions are coded:

1. Response opportunities - chances that children get to make
   overt oral responses. Several types of response opportunities
   are coded: direct questions (teacher addresses a question to
   a particular child); open questions (the teacher waits for
   children to raise their hands before calling on one to res-
   pond); call outs (the child calls out the answer without waiting
for the teacher's recognition); chorus questions (the children respond in unison); discipline questions (the teacher deliberately calls on an inattentive child as a control technique to command his attention); reading turns; and recitation opportunities.

2. Level of question - response demands made upon the child. Four levels are differentiated: Process questions, product questions, choice questions, or self-reference questions. (Modification included deleting this category).

3. Quality of the child's response - coded in one of four categories: correct response, incomplete response, or partially correct response, incorrect response, or no response. (Modification included deleting this category.)

4. Teacher's feedback reactions following the children's responses. These are coded in the following categories: praise; criticism; product feedback (teacher gives answer); process feedback (teacher explains the cognitive or behavioral processes which must be gone through in order to get correct answer); repetition of question, rephrasing the question, or giving a clue; asking a new question; and failure to provide any feedback reaction at all.

5. Work related contacts - all occasions in which the teacher is interacting with an individual pupil about class connected seat work or homework. These are coded separately depending on whether they are initiated by the teacher or child.

6. Behavior evaluations - teacher singles out a child for praise
or criticism regarding classroom behavior. (Praise or criticism here concerns only behavior.)

7. Procedural contacts - all dyadic interactions that do not fit into the above categories. Most have to do with procedural matters related to everyday classroom maintenance. (Modification included deleting this category.)

The abbreviated version of this scale that was used include the following categories:

1. Response opportunities (teacher initiated) - this involves a public attempt by an individual child to answer a question posed by the teacher. Separate categories used included:
   a) Reading turns - when a child is called upon to read a passage aloud.
   b) Work recitations - all academic recitations that occur in the classroom with the exception of reading turns. Examples of this are reciting multiplication tables, and other verbal demonstrations of academic knowledge and skills.
   c) Direct questions - involves the teacher calling on a pupil to answer a question without any indication of interest or willingness to respond.
   d) Discipline questions - teacher deliberately calls on an inattentive student as a control technique to command his attention.

2. Teacher feedback (teacher initiated) -
   a) Praise - the teacher goes beyond the level of affirmation
and verbally compliments the child on his academic performance. The teacher communicates positive evaluation and/or warm personal reaction to the child. "Yes," "OK," "That's right," will not be considered unless accompanied by obvious expression.

b) Criticism - the teacher expresses anger or personal criticism of the child in addition to stating the incorrectness of his response (e.g., "Johnny, that's wrong. I told you how to do it, now listen and get it right this time.").

c) No feedback - no response to the child by teacher (neither verbally or with gestures to a child's response or completed reading turn).

d) Repeat question - the teacher repeats the question.

e) Ask another - another student is called on to answer the question.

f) Give answer - the teacher gives correct answer.

g) Rephrase or give clue - teacher rephrases the question or gives clue to correct answer.

h) Total amount of teacher feedback.

3. Work-related contacts (teacher initiated) unsolicited assistance from the teacher to the child regarding an assigned academic task. Examples of this is clarifying the initial directions, providing the child with technical assistance on how to complete the task.

4. Work-related contacts (student initiated). Child raises
hand to ask the teacher about assigned tasks or takes his work up to the teacher's desk.

5. Behavior Evaluations (teacher initiated) - teacher singles out a child for praise or criticism regarding his classroom behavior. The child is identified and the teacher is coded for praise or criticism.

6. Total teacher-initiated work-related contacts - this involves the total number of times the teacher initiated interactions concerning individual classroom work.

DATA ANALYSIS

Raw scores (frequency counts) were summed across pupils in each achievement level by class condition and means assigned to each measure. Analyses of variances were used to determine differences in teacher interaction. A three by four analysis of variance was performed with the three achievement levels representing one factor and the four classes representing the other. The Duncan's Multiple Comparison procedure as outlined in Edwards (1963, pp. 138-140) was used to determine significant differences between the achievement levels where a significant (p < .05) main effect for achievement was indicated.

Reliability Evidence

Reliabilities in previous studies using the Brophy and Good system have been quite adequate. According to the authors, interrater agreement of .80 is considered adequate for research purposes (Brophy & Good,
1970). Bagley (1974) obtained interrater reliability of .83. Brophy et al. (1973) reported a reliability of .80. Other investigators (Chapman, 1975; Evertson, 1973; Jeter, 1972) have shown reliabilities ranging from .80 to .83. Most of these reliability checks were carried out by having two independent observers rate either one student or a group of students with respect to their interactions with teachers.

Procedure

A letter (Appendix B) explaining the purpose of the study was sent to each principal. The researcher contacted each principal to answer further questions concerning the purpose of the study. The teachers were told that the purpose of the study was to observe classroom behaviors of students with varying levels of perceived achievement. The teachers were asked to select four students at each of the three levels of achievement: H (high), M (middle), and L (low) and list their first names and levels perceived achievement on Part I of the Student Data Sheet.

On Part II of the Student Data Sheet the teachers were asked to list the names in corresponding order to Part I, but without the achievement levels. The names were randomly selected as primary or alternate students. The primary subjects served as the actual observational group. Alternate students were to be observed when primary students were absent (none actually were absent). The student data sheets were then given to each principal. Two observers arrived at the beginning of social studies class and obtained Part II of the Student Data Sheets from the principals. In order to identify the observational students, the teachers were asked to introduce the observers to the class and ask that each student stand
and say their name. The observers made note as to where observational
students were seated. Each observer was randomly assigned to observe
three students. The observers sat in the rear of the class and recorded
the communications between the teachers and individual students in the
observational group using the response tabulation from the Dyadic Interaction Scale (Appendix C). Data was collected for eight successive
days. Each classroom in each school was observed two days, forty
minutes each day. The responses were recorded in the five categories
included on the modified version of the Dyadic Interaction Scale.
In order to check reliability the dyadic interactions between teachers
and one student from each class was recorded by both observers.
CHAPTER IV

RESULTS

Reliabilities were computed for each measure. Two-way analyses of variances (ANOVA) were then performed on measures reaching the reliability criterion. Multiple comparisons of means for achievement levels were used to evaluate the mean differences among the achievement levels where a significant achievement main effect was indicated.

Shown in Table 1 are percentages of agreement between observers on all measures of the modified version of the Dyadic Interaction Scale. Measures with percentages of agreement not reaching .75 were eliminated from further analysis. These were Giving Answers (.63) and Asking Another (.66). The range of observer agreement was .63 - .92 with a median of .83.

To determine the degree of association between total teacher initiated interactions and student initiated work-related interactions a product-moment correlation coefficient was computed. A nonsignificant correlation of .12 was obtained indicating that individual student initiated interactions did not co-vary with teacher initiated interactions.

A mixed design with three achievement levels (fixed) and four classes (random) was used (Gilford, 1965). The analysis was based on the effects of achievement level, class, and the interaction between class and achievement level. A summary of ANOVA results is shown in Table 2.
<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Percent Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Response Opportunities</td>
<td>.89</td>
</tr>
<tr>
<td>Total Feedback</td>
<td>.89</td>
</tr>
<tr>
<td>Work-related Contacts (Teacher initiated)</td>
<td>.91</td>
</tr>
<tr>
<td>Work-related Contacts (Student initiated)</td>
<td>.84</td>
</tr>
<tr>
<td>Behavioral Praise</td>
<td>.83</td>
</tr>
<tr>
<td>Behavioral Criticism</td>
<td>.78</td>
</tr>
<tr>
<td>Reading Turns</td>
<td>.92</td>
</tr>
<tr>
<td>Work Recitations</td>
<td>.92</td>
</tr>
<tr>
<td>Direct Questions (Teacher initiated)</td>
<td>.91</td>
</tr>
<tr>
<td>Discipline Questions (Teacher initiated)</td>
<td>.86</td>
</tr>
<tr>
<td>Praise</td>
<td>.80</td>
</tr>
<tr>
<td>Criticism</td>
<td>.75</td>
</tr>
<tr>
<td>Repeat Questions</td>
<td>.80</td>
</tr>
<tr>
<td>Ask Another*</td>
<td>.63</td>
</tr>
<tr>
<td>No Feedback</td>
<td>.88</td>
</tr>
<tr>
<td>Gives Answer*</td>
<td>.66</td>
</tr>
<tr>
<td>Rephrase</td>
<td>.78</td>
</tr>
</tbody>
</table>

Note: These measures were eliminated because they did not reach criteria for inclusion.
<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>dF</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Subjects</td>
<td>944.46</td>
<td>23</td>
<td>41.06</td>
<td></td>
</tr>
<tr>
<td>A (Achievement Levels)</td>
<td>522.33</td>
<td>2</td>
<td>261.16</td>
<td>5.79*</td>
</tr>
<tr>
<td>B (Class)</td>
<td>151.46</td>
<td>3</td>
<td>50.48</td>
<td>.23</td>
</tr>
<tr>
<td>AB</td>
<td>270.57</td>
<td>6</td>
<td>45.09</td>
<td>.20</td>
</tr>
<tr>
<td>Subjects Within Groups</td>
<td>2595.50</td>
<td>12</td>
<td>216.29</td>
<td></td>
</tr>
<tr>
<td>Total Sum of Squares</td>
<td>359.96</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*P < .05
which indicates a statistically significant different (p < .05) in total teacher initiated response opportunities afforded to the three achievement levels. No significant main class effect or interaction between class and achievement level was found.

Table 3 presents all measures not receiving significant F ratios with regard to achievement level effects. As it is shown a majority of the variables failed to demonstrate significant differences among achievement levels. Only two qualitative variables came close to reaching significance at the p < .05 level, work-related criticism, and behavioral criticism. Overall the results for total quantitative dyadic interactions showed no differences in total teacher initiated dyadic contacts between achievement levels, it did come closer to reaching significance.

While no hypotheses were made concerning class effects or the interaction between class and achievement, two out of the total of 18 measures indicated significant class effects. Total teacher feedback and behavioral praise showed significant class effects (p < .05). The interaction between achievement level and class showed two measures reaching significance (p < .05). These were work recitations and behavioral praise. The difficulty of interpretation of the results would be enhanced for a large number of significant class or interaction effects.

Table 4 presents measures obtaining significant F ratios for achievement level effects. As can be seen only six of the 18 measures produced significant level effects.

To evaluate differences among achievement levels on measures producing significant overall F ratios, the Duncan Multiple Comparison
<table>
<thead>
<tr>
<th>Measure</th>
<th>F ratio Main Effect (Levels)</th>
<th>F ratio Main Effect (Class)</th>
<th>F ratio Interaction (Level x Class)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total teacher feedback</td>
<td>.17</td>
<td>4.77*</td>
<td>2.76</td>
</tr>
<tr>
<td>Work-related criticism</td>
<td>4.99</td>
<td>2.10</td>
<td>.48</td>
</tr>
<tr>
<td>Work-related praise</td>
<td>.75</td>
<td>1.61</td>
<td>2.52</td>
</tr>
<tr>
<td>Discipline Questions</td>
<td>1.45</td>
<td>.21</td>
<td>.92</td>
</tr>
<tr>
<td>Work-related contacts (Teacher initiated)</td>
<td>.85</td>
<td>.86</td>
<td>2.98</td>
</tr>
<tr>
<td>Behavioral criticism</td>
<td>4.66</td>
<td>.74</td>
<td>1.82</td>
</tr>
<tr>
<td>No feedback</td>
<td>1.12</td>
<td>.13</td>
<td>.16</td>
</tr>
<tr>
<td>Gives answer</td>
<td>1.51</td>
<td>.29</td>
<td>2.61</td>
</tr>
<tr>
<td>Work recitations</td>
<td>3.33</td>
<td>.95</td>
<td>4.62*</td>
</tr>
<tr>
<td>Rephrase of Gives Clue</td>
<td>1.66</td>
<td>4.16</td>
<td>2.15</td>
</tr>
<tr>
<td>Total dyadic contacts</td>
<td>4.50</td>
<td>1.04</td>
<td>1.14</td>
</tr>
</tbody>
</table>

*p < .05

Critical F values

- .05 5.14 levels
- .01 10.92
- .05 4.76 class
- .01 9.78
- .05 3.00 level x class
- .01 4.82
## TABLE 4

**MEASURES WITH SIGNIFICANT F RATIOS FOR ACHIEVEMENT LEVEL EFFECTS**

<table>
<thead>
<tr>
<th>Measure</th>
<th>F ratio Main Effect (Levels)</th>
<th>F ratio Main Effect (Class)</th>
<th>F ratio Interaction (Level x Class)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response opportunities (Teacher initiated)</td>
<td>5.79*</td>
<td>.74</td>
<td>.65</td>
</tr>
<tr>
<td>Ask another</td>
<td>8.60*</td>
<td>.08</td>
<td>1.89</td>
</tr>
<tr>
<td>Repeat Questions</td>
<td>10.74*</td>
<td>.23</td>
<td>.20</td>
</tr>
<tr>
<td>Work-related contacts (Student initiated)</td>
<td>6.73*</td>
<td>1.12</td>
<td>1.63</td>
</tr>
<tr>
<td>Behavioral praise</td>
<td>.61</td>
<td>8.44**</td>
<td>4.01*</td>
</tr>
<tr>
<td>Direct Questions</td>
<td>14.99**</td>
<td>2.95</td>
<td>.25</td>
</tr>
<tr>
<td>Reading Turns</td>
<td>5.73*</td>
<td>.65</td>
<td>1.91</td>
</tr>
</tbody>
</table>

**p < .01**  **Critical F values**

<table>
<thead>
<tr>
<th>Critical F values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>p &lt; .01</strong></td>
</tr>
<tr>
<td>5.14 levels</td>
</tr>
<tr>
<td>10.92 levels</td>
</tr>
<tr>
<td>4.76 class</td>
</tr>
<tr>
<td>9.78 class</td>
</tr>
<tr>
<td>3.00 level x class</td>
</tr>
<tr>
<td>4.82 level x class</td>
</tr>
</tbody>
</table>
(Edwards, 1963) procedure was carried out. Table 5 shows an example of this procedure which indicates that for total teacher initiated response opportunities, high achievers received significantly more opportunities to respond than did middle or low achievers. No significant difference was observed between middle and low achievers.

Table 6 presents a summary of all other multiple comparisons for measures showing significant F ratios for achievement level effects. It is shown that teachers asked significantly ($p < .01$) more direct questions of high achievers than middle and low achievers. In addition, high achievers initiated significantly ($p < .05$) more work-related contacts with teachers than middle and low achievers. No significant differences was indicated between middle and low achievers. Teachers tended to repeat questions significantly ($p < .01$) more for highs than middle and low achievers when the student failed to answer initial questions. Highs received significantly more reading turns than lows. No significant differences were shown between low and middle achievers.
<table>
<thead>
<tr>
<th>Means</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Shortest Significant Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>36.62</td>
<td>9.62*</td>
<td>10.25*</td>
<td>$r_2 = 8.23$</td>
</tr>
<tr>
<td>Middle</td>
<td>27.00</td>
<td></td>
<td>0.63</td>
<td>$r_3 = 8.54$</td>
</tr>
<tr>
<td>Low</td>
<td>26.37</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .05$
<table>
<thead>
<tr>
<th>Name of Measure</th>
<th>Ranked Means</th>
<th>Significant Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-related contacts</td>
<td>H M L</td>
<td>H &gt; M*, H &gt; L*</td>
</tr>
<tr>
<td>(Student initiated)</td>
<td>12.0 7.0 5.5</td>
<td></td>
</tr>
<tr>
<td>Direct Questions</td>
<td>H M L</td>
<td>H &gt; L**, H &gt; M**</td>
</tr>
<tr>
<td>(Teacher initiated)</td>
<td>13.25 9.75 8.37</td>
<td></td>
</tr>
<tr>
<td>Response Opportunities</td>
<td>H M L</td>
<td>H &gt; L*, H &gt; M*</td>
</tr>
<tr>
<td>(Teacher initiated)</td>
<td>36.62 27.00 26.37</td>
<td></td>
</tr>
<tr>
<td>Repeats Question</td>
<td>H M L</td>
<td>H &gt; L**</td>
</tr>
<tr>
<td></td>
<td>5.50 4.12 1.25</td>
<td></td>
</tr>
<tr>
<td>Reading Turns</td>
<td>H M L</td>
<td>H &gt; L*</td>
</tr>
<tr>
<td></td>
<td>13.37 9.87 5.87</td>
<td></td>
</tr>
</tbody>
</table>

*p* < .05

**p** < .01
CHAPTER V
DISCUSSION AND CONCLUSION

Some limitations are noted in the present study that may somewhat restrict the conclusions that be drawn from the results. First, although four classes were observed, there were only three teachers. One teacher taught both social studies classes in one of the schools. This was a crucial limitation since the results are on a small number of teachers. A larger and more stratified random sample of teachers and students would have been an improvement. Another limitation was the time of the school year in which the data was collected. The data was collected late in the year near the end of the spring semester. Classrooms may tend to deviate from their everyday activities toward the end of the school year. However, based on the author's knowledge and experience with elementary classrooms this was not the case in the present study.

Prior to observations, the teachers were asked if they should alter their teaching strategies while observers recorded interactions. This was usually asked after the teachers were informed as to the purpose of the study. A limitation here is that one cannot be certain as to whether or not the teachers did teach the observational group differently. It is possible, however, that the teachers called on high achievers more often in effort to impress the observers. In addition, it could be that the teachers called on higher achievers more because of the greater
probability of correctly answering questions and thus reinforce them for being effective or good teachers.

Another possible limitation (which does not directly affect the present study) is the number of categories included on the complete Brophy and Good (1970) scales. This scale can code in excess of 150 teacher-student interactions and is very time consuming to administer. In addition, many significant differences on chance basis are likely to occur. In addition, with so many categories the data collected in a study is widely dispersed across numerous categories. This wide dispersion of the data results in relatively low frequency of data in each category, which ultimately effects the confidence in the data analysis.

While many limitations are noted, reliability was not among them. Although the data were collected over a relatively short period of time (two days in each class), and observer training was only two hours, reliabilities on most of the variables were excellent. The median reliability for the present study was .83. This figure is consistent with those reported by others (Ross, 1976; Evertson, 1973; Bagley, 1974) using abbreviated versions of the complete scale median. Reliabilities for these studies were .80, .81, and .83 respectively.

Conservative findings in light of other research (Brophy & Good, 1970; Cornbleth et al., 1974) show that overall, 11 of the 18 measures of teacher behavior were not significant. This suggests that perhaps teachers do not differentially treat their students.

Results of this study indicated quantitative differences in teacher
behavior toward students with varying achievement levels. While high achievers initiated significantly more work-related contacts, the correlation between student initiated work-related contacts and teacher initiated work-related contacts was nonsignificant. This suggests that despite high achievers initiating more work-related contacts for themselves, teachers distributed their work-related interactions equally to achievement groups.

The nonsignificant trend for low achievers to receive more work-related criticism (compared to high and middle achievers) might be related to the finding that they initiated significantly fewer contacts with their teachers than did middle and high achievers. It is possible that as a result of this more frequent criticisms these students become more inhibited from initiating contacts for fear of being criticized.

In general, the findings on quantity of contacts were at variance with an earlier study (Brophy & Good, 1970) which showed nonsignificant findings for most quantitative measures. Brophy and good (1970) found significant no differences in teacher initiated response opportunities, direct questions, or reading turns among high and low achievers.

The one significant qualitative finding in the present study is consistent with other studies (Jeter, 1972; Jeter & Davis, 1973). These studies showed that teachers repeated and rephrased questions significantly (p < .05) more for high achievers than for low achievers.

The quantitative findings reported in the present study are supported by others (Cornbleth, 1974; Evertson, Brophy, & Good, 1972; 1973; Good, 1970; Jeter & Davis, 1973; Jeter 1972).
The quantitative findings of these studies are encouraging, in that they represent the same measures used in the present study.

The quantitative findings in the above studies as well as those in the present study are at variance with those found in the Brophy and Good (1970) study. One possible explanation for the contrasting findings could be that the teachers in the Brophy and Good (1970) study see more value interacting on a qualitative level with their students. However, unfortunately for the low achievers they are at a disadvantage.

The Brophy and Good (1970) study was the only study to report differential treatment on all qualitative variables. Other studies examining three to four qualitative measures (Cornbleth, Davis, & Button, 1974; Mendoza, Sikes, & Brophy, 1972) either reported differential treatment on one measure or nonsignificant findings on all qualitative measures.

Another possible explanation for the different findings could be that the length of observation varied between studies. While Brophy and Good (1970) collected data only for two days in each of four classes, Evertson, Brophy, and Good (1972; 1973) collected data for more than 40 hours. It is possible that longer observation sessions will result in more differences on quantitative measures.

The finding of only one significant qualitative measure (Repeats Questions) out of the ten investigated is in contrast to most of the studies in the literature. With the exception the findings of Cornbleth, Davis, and Button (1974) and Mendoza, Sikes, and Good (1972). No other studies reported no qualitative differences. The qualitative measures
which were used in the above studies were Behavior Criticism, No Feedback, Repeats Question, Praise, Criticism, and Behavior Praise. It is possible that the teachers in the present study as well as those in the above studies are more aware of the qualitative nature of their teaching behavior.

Several quantitative findings in the present study are consistent with those of other investigators. Significant differences favoring high achievers in total response opportunities is supported by others (Mendoza, Goud, & Brophy, 1972; Good, Sikes, & Brophy, 1972; Cornbleth, Davis, & Button, 1974; Jeter & Davis, 1973; Jeter, 1972). All of these researchers reported that high achievers received significantly ($p < .05$) more opportunities to respond than low achievers.

The quantitative finding that high achievers received significantly ($p < .05$) more reading turns than low achievers is also supported by the findings of others (Good, 1970; Evertson, Brophy, & Good, 1972).

Evidence that teachers asked high achievers significantly ($p < .05$) more direct questions is consistent with results from other studies (Good, 1970; Cornbleth, Davis, & Button, 1974; Mendoza, Good, & Brophy, 1972; Good, Sikes, & Brophy, 1972; Jeter & Davis, 1973; Jeter, 1972).

The qualitative finding in the present study that teachers repeated questions significantly ($p < .05$) more for high achievers than low achievers is supported by others (Brophy & Good, 1970; Jeter & Davis, 1973).

While the above findings were all consistent with the present investigation, several studies indicated results which contrasted with the findings of the present study. In the present study it was reported that
the teachers repeated questions significantly \((p < .05)\) more often for high achievers than for low achievers. However, other studies (Evertson, Brophy, & Good, 1972; Evertson, Brophy, & Good, 1973; Good, Sikes, & Brophy, 1972) reported that teachers repeated questions significantly \((p < .05)\) more often for low achievers.

No studies reported that low or middle achievers received significantly more direct questions, response opportunities, or reading turns than high achievers.

Suggestions For Future Research

Future study of teacher-student interactions might consider these recommendations:

It is recommended that studies be conducted which look at large samples of teachers. Typically investigators have studied only four to five teachers and restricted student samples. More longitudinal studies are also needed to look at teacher behavior over long periods of time. Only two studies (Evertson, Brophy, Harris, & Good, 1973; 1973) reported data extending over the entire school year.

While the literature suggests that there are very few significant differences in teacher behavior toward middle achievers as compared to high and low achievers, the present study showed variation in teacher behavior toward the middle group. The mean for one measure (Repeats Question) was closer to the mean for the high group. However, on another measure (Response Opportunities), the mean for the middle group was closer to the mean for the low group. This variation in teacher behavior may suggest that it would be fruitful for future researchers to more care-
fully examine these relationships across all levels of achievement.

It is also recommended that investigators not intending to conduct longitudinal studies, choose midyear as a time for observations. This should be done to assure that teachers have had sufficient time to form impressions of student achievement. Also, hopefully by midyear it is still too early for teachers to give up on low achievers.

To reiterate, research should also use measures which have consistently shown differential teacher behavior. For the present study those variables that indicated differential treatment were reading turn, repeats question, work-related contacts (student initiated), direct questions, and response opportunities.

Summary

Several limitations were noted in the present study. The results were based on only three teachers. Another limitation was that the data was collected near the end of the school year. It is possible that the teachers had already given up on the low achievers.

Reliability on most of the measures were adequate. The reliability range was .63 to .92 with a median of .83.

While the findings indicate that teachers generally tend to distribute their behavior equally to achievement groups, several quantitative measures indicated differential behavior favoring high achievers. The teachers gave significantly more total response opportunities, reading turns, and direct questions to the high achievers.

In addition to the present study only a few studies have found con-
sistent qualitative differences.

Future researchers might consider using larger and less restricted samples of teachers and students. Logitudinal studies are also needed to determine if differences persist over long periods of time. More studies are also needed using the middle group to more carefully examine teacher behavior across all levels of achievement.
REFERENCES


Horn, E. Distribution of opportunity for participation among the various pupils in the classroom recitations. New York: Teachers College, Columbia University, 1914.


Ross, S. A study examining teacher initiated responses to high and low achieving first graders. Seminar paper presented to the Faculty of the Department of Psychology, University of Wisconsin - La Crosse, La Crosse, WI, 1974.


PART I

Achievement Level [ ] Achievement Level [ ] Achievement Level [ ]

Name ___________________ Male Name ___________________ Male Name ___________________ Male
Name ___________________ Female Name ___________________ Female Name ___________________ Female
Name ___________________ Male Name ___________________ Male Name ___________________ Male
Name ___________________ Female Name ___________________ Female Name ___________________ Female

PART II

GROUP X
Name ___________________
Name ___________________
Name ___________________
Name ___________________

GROUP Y
Name ___________________
Name ___________________
Name ___________________
Name ___________________

GROUP Z
Name ___________________
Name ___________________
Name ___________________
Name ___________________
APPENDIX B

THE UNIVERSITY OF WISCONSIN - LA CROSSE
La Crosse, Wisconsin 54601 (608) 784-6050

May 17, 1978

Tom Jones, Principal
Thomaseville Elementary School
Jonesville, Iowa 54921

Dear Mr. Jones:

This serves to explain the purpose of the study to be conducted in your school. Briefly, the intent will be to determine if there are any differences in the quantity and qualities of teacher interaction with high, middle, and low achieving students. Three observers will record the interactions between the teachers and students in two fourth grade social studies classes one hour for four days. Please read the following instructions:

1. Have the teachers list the first names of four high, middle, and low achieving male and female students on Part I of the Student Data Sheets.
2. On Part II have the teacher list the first name of the same students in the order corresponding to the names on Part I but with no indication of achievement levels.
3. The teachers will submit the Student Data Sheets to the principals.
4. The observers will obtain only Part II of the Student Data Sheets from the principals.
5. The observers will enter the social studies classes at the beginning of the class period.

If you have any further questions, please do not hesitate to call me at 785-8441. Your participation is greatly appreciated.

Thank you,

Terry J. Smith
Terry J. Smith, Graduate Student
School Psychology
University of Wisconsin-La Crosse
### APPENDIX C

**NAME:** DEBBIE  
**CLASS:** 18  
**SCHOOL:** SPENCE

#### DYADIC INTERACTION SCALE

Response Opportunities Total Below

<table>
<thead>
<tr>
<th>Reading Turns</th>
<th>Work Recitations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Direct Question</th>
<th>Discipline Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### DYADIC INTERACTION SCALE

Teacher Feedback (Teacher-Initiated) Total Below

<table>
<thead>
<tr>
<th>Praise</th>
<th>Criticism</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Appendix C (Continued)

**DYADIC INTERACTION SCALE**

Teacher Feedback (Teacher-Initiated) Total Below

<table>
<thead>
<tr>
<th>No Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
</tbody>
</table>

---

**TEACHER FEEDBACK**

<table>
<thead>
<tr>
<th>Repeat Question</th>
<th>Ask Another</th>
<th>Gives Answer</th>
<th>Rephrase or Gives Clue</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
</tbody>
</table>

---

**DYADIC INTERACTION SCALE**

<table>
<thead>
<tr>
<th>Work-related Contacts (Teacher Initiated) Total</th>
<th>Work-related Contacts (Child Initiated) Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>Work-related Contacts (Teacher Initiated) Total</th>
<th>Work-related Contacts (Child Initiated) Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
<tr>
<td>✔️ ✔️ ✔️ ✔️ ✔️</td>
<td>✔️ ✔️ ✔️ ✔️</td>
</tr>
</tbody>
</table>
Appendix C (Continued)

DYADIC INTERACTION SCALE

<table>
<thead>
<tr>
<th>Total Teacher Initiated Work-related contacts</th>
<th>Behavior Evaluation (Teacher Initiated) Praise</th>
<th>Behavior Evaluation (Teacher Initiated) Praise</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>