

THE RELATIONSHIP BETWEEN TYPE OF TEACHER  
NONVERBAL COMMUNICATION AND FIRST AND  
SECOND GRADE READING ACHIEVEMENT

By

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## CHAPTER I

### INTRODUCTION

Educators have, for centuries, been experts in the art of verbal communication for it is their primary means of transmitting information to their students. Recently concern has been shown for another form of communication. This other form is nonverbal communication and though not new in the history of man its emergence in the field of education is quite recent.

Teachers communicate nonverbally to their students every day. It may occur through a smile, a gesture, a movement or the like. Nonverbal communication in education suggests interpersonal relationships between students and teachers. Thus, an awareness of the magnitude of nonverbal communication can assist a teacher in becoming increasingly more sensitive in the relationships involving students.

Strides are being made in the discovery of the importance of nonverbal communication. An example of this is suggested by Bugental, Kaswan and Love (1970). They found that when a child is faced with conflicting messages it is generally interpreted more negatively than it would be by adults. Children tend to resolve the incongruity of the message by assuming the worst. Because children sometimes have difficulty interpreting messages accurately it is up to the adult to send more positive signals and avoid sending negative ones (Koch, 1971).

All human relationships involve meanings that are more than words, and the nonverbal expresses the truth in these relationships (Galloway, 1971).

#### Need for the Study

Reading serves as a foundation for academic success for the majority of basic instruction relies on the understanding obtained from the printed page. The first and second grades are two of the most important years of a child's academic career for it is in those years that the foundation is laid. A major portion of the responsibility for the success or failure of a first or second grade child rests with the teacher.

Within the teaching learning situation, the pattern of behavior of the teacher influences the pattern of behavior of the student. One avenue through which a teacher actively involves the students in participation is through communication which leads to interaction.

Interaction implies role-taking and empathic skills and it implies a mutual reciprocity of understanding others and being understood. This view of interaction is assumed to be a significant process and a key factor in producing learning in the classroom and communication is viewed as the catalyst for encouraging or restricting interactions (French and Galloway, 1968).

There are two forms of communication, verbal and nonverbal. The former has been a matter of educational concern and study for some time. Until just recently, however, the nonverbal form has not been considered extremely important in and of itself to educators. Attention is directed to the various nonverbal aspects of communication particularly in disciplines other than education. The field of communication theory, which has drawn upon the efforts of researchers in the areas of

anthropology, linguistic, psychology and psychiatry has produced evidence concerning the nature of nonverbal communication labeled body motion or gesture. Hayes (1964) provides a summary of the basic assumptions concerning the communication aspects of body motion which includes:

1. Like other events in nature, no body movement or expression is without meaning in the context in which it appears.
2. Like other aspects of human behavior, body posture, movement, and facial expression are patterned and thus subject to systematic analysis.
3. Visible body activity like audible acoustic activity systematically influences the behavior of other members of any particular group.

Educators have now become cognizant of the fact that nonverbal communication is, in fact, an area which needs the utmost attention because "if a difference exists between the two expressions, it is the nonverbal that is believed and accepted by the pupil as representing the authentic message" (Galloway, 1966).

Teachers need to be aware of the messages they are communicating to their students. If a child perceives that his teacher is misrepresenting the interpersonal relationship in which the two are involved an element of mistrust will evolve and prevail in every situation.

Nonverbal behaviors reflect those qualities that provide instantaneous perception of meaning within the context of interpersonal relationships and often are the most lingering retention of the event. As such, nonverbal phenomena become qualitatively predominant aspects of interpersonal relationships. These interpersonal relationships are critical aspects of all learning situations (Victoria, 1970).

Because nonverbal communication is so vitally important to the area of education, there is a need for further study of some of its various components. Virtually nothing has been done in the area of touch and its relationship to the teaching-learning situation.



Various other aspects of nonverbal communication have been investigated and have dealt with virtually all age levels. To date, however, no consideration has been given to physical contact between the teacher and child within the learning situation. It has been suggested that, in many instances, children encounter problems when faced with incongruent messages thus it seems appropriate to investigate another means of nonverbal communication in an attempt to alleviate some of the existing inconsistencies. This study purports to do that.

Much concern has been reported about the sex of the student and the teacher-child relationship. These concerns evolve around the unreasonable percentages of boys who fail in reading at the beginning reading level. Thus, along with the interest in one area of nonverbal communication, i.e. touch and its relationship to the teacher-learning situation, evolves the added dimension of that relationship to the sex of the student to whom the touch is directed.

#### Statement of the Problem

The problem of this study was to determine the extent to which nonverbal communication through touch was related to reading achievement scores of first and second grade students and sex of students.

#### Purpose of the Study

The purpose of this study was to determine the relationship between the type of nonverbal communication through touch exhibited by the teacher and the reading achievement scores of their respective students.

### Hypotheses

The hypotheses to be tested as stated in the null form are:

There will be no significant relationship between type of touch by the teacher as measured by the rating scale and reading achievement scores of first and second grade students.

There will be no significant relationship between type of touch by the teacher and sex of student.

### Definitions of Terms

For the purpose of this study the following definitions will be used:

1. Nonverbal Communication - That type of communication occurring between a teacher and a student through the avenue of body contact, i.e., touch.
2. Affectional Body Contact - Body contact of a warm, loving nature, either solicited by or reciprocated by the teacher. Any contact which suggests an affectionate relationship between teacher and child.
3. Directive Body Contact - Body contact between a teacher and student initiated by the teacher for the purpose of redirecting a student's attention.
4. Disciplinary Body Contact - Body contact between teacher and student for the purpose of discipline.
5. Reading Achievement - That achievement which is measured by the Word Reading, Paragraph Meaning and Vocabulary subtests of the Stanford Achievement Test, Primary I Battery, Form W and the Word Meaning and Paragraph Meaning subtests of the Stanford Achievement Test, Primary II Battery, Form W.

6. Reading Achievement Scores - Those scores obtained from the subtests used of the Stanford Achievement Test, Primary I and Primary II Battery.

#### Assumptions

1. The use of the video tape recorder did not alter the interaction between students and teacher.
2. The scale in use provides a method of classifying the types of nonverbal behavior sought.

#### Limitations of the Study

1. The selection of elementary schools in which to make the video tapings was limited to those who were willing to participate in the study.
2. Only first grade and second grade teachers were selected to participate in the study and generalizations may be made only to those teachers.
3. Analysis of the first and second grade teacher's nonverbal communication was limited to the categories established on the rating scale devised by the writer.
4. The elementary schools selected to participate in this study were semi-rural or rural.

#### Methodology

The reliability between the judges trained for the purpose of rating the tapes obtained of the teachers was checked by the use of Scott's Coefficient (Flanders, 1966).

The teacher ratings and the reading achievement scores were analyzed using the point-biserial correlation to determine the relationship between the two. The ratings of the teachers served as the dichotomous measure and the reading achievement scores served as the continuous measure.

The relationship between type of touch and sex of student was analyzed by way of the phi coefficient to determine the degree of relationship. A chi-square was then computed to establish whether the variables were related.

## CHAPTER II

### REVIEW OF SELECTED LITERATURE

#### Nonverbal Communication

Review of the literature will include selected studies which pertain to nonverbal communication in the field of elementary education. Other studies included will be restricted to those dealing with elementary school age children.

Dimitrovsky (1964) conducted an investigation which was based on the assumption that the ability to identify emotional expressions is positively related to age, grade, school experience and intelligence. It was designed to replicate, in part, a previous investigation conducted by Georgina Gates on which only a brief summary exists.

The identification of emotional meaning in the present study involves vocal expressions. The subjects were 14 children of each sex at each year level between the ages five and 12 for a total of 224 children. They were selected from a large school population and no one was included whose known I.Q. was below 90. In general, the children were asked to identify four emotional expressions; anger, happiness, love and sadness.

The three instruments that were used were a test of ability to identify emotional meaning of vocal expression, stick figure drawings

depicting the four emotions, and the Ammons Full Range Picture Vocabulary Test. Recordings of a standard paragraph were used which expressed each of the four emotions. The paragraphs were read by both males and females all of whom were adults. After listening to the paragraphs the children were asked to point to the drawing which best exhibited the emotion expressed. For reliability purposes, 64 subjects were retested one week after the original testing.

From the resulting data it was suggested that there is a gradual but progressive increase in the ability to identify emotional meaning from vocal expression with chronological age. Between the ages of five and twelve there is a considerable growth in sensitivity to emotional communication. Implications for education were revealed in two of the conclusions drawn from the study. The subjects correctly identified the emotions of sad and angry more frequently than any others thus implying that children can identify these with more accuracy than they can distinguish between love and happy. Also, the tendency to respond to negative emotional meanings seem particularly characteristic of children.

Even though children are sensitive to emotional communication, their growth in sensitivity has virtually just begun when they enter school. Because of this the teacher needs to be aware that a verbal message with accompanying vocal expression may not be interpreted by the child in the same manner it was intended.

Similar implications are suggested by an investigation conducted by Bugental, Kaswan and Love (1970). Their study involved two central goals:

to compare the interpretation of conflicting communication by adults and children and to compare the adequacy of a linear versus an interactive model in accounting for the interpretation of conflicting communication.

The method employed by the authors was a set of videotaped stimuli. The messages which were to serve as the stimuli were acted so that systematic variation between positive and negative evaluation could be obtained. The messages varied three ways: the visual channel, the vocal channel and the verbal channel. There were four messages for each combination for a total of eight sets. Two of the four messages were enacted by males and the other two by females. The messages were prejudged to decrease ambiguity and intrinsic conflict. Prejudgement occurred for all three channels involved.

The subjects used for the study were families drawn from a middle-class area. The subjects were divided into two groups. One group consisted of 80 children between the ages of five and twelve and the other group were 80 parents. The children all belonged to either the Boy Scouts or Girl Scouts thus making the sample neither random nor representative. The authors did state, however, that "adequate child comparisons can be made as both were drawn from the same group."

Each subject viewed four scenes representing one combination of messages and rated them according to a 13-point scale predetermined as suitable for use with young children.

Ratings of the taped messages were analyzed by means of a mixed-design analysis of variance. The analysis revealed that the prediction

that children would respond more negatively than adults to positive visual messages, negative script and negative voice messages enacted by women was confirmed at the .05 level of significance. No significant differences were found between the ratings of adults and children of male messages. Also, both adults and children tended to rate women more negatively than men when conflicting messages were presented. Evidence further indicated that the interpretation of conflicting messages was greatly influenced by the facial expression of the speaker. No mention was made, however, of the age of the interpreter of the facial expressions. It was concluded that "children, when confronted with a conflicting message, resolve the incongruity by assuming the worst" (Bugental, et al., 1970).

An investigation was conducted by Conn, Edwards, Rosenthal and Crowne (1968) for the primary purpose of studying the behavior and personality characteristics of children who gain in I.Q. Particular attention was given to the accuracy with which the child perceives vocal expression of emotion. The rationale for the study stemmed from earlier studies, done by various people, which demonstrated that children do live up to their teachers' expectations. Conn, et al. (1968) wished to examine the dynamics of the teacher-child relationship to find possible reasons for the expectation phenomena.

Students in grades one through six from an upper middle class school were used for the study. The subjects were given the Test of General Ability for the purpose of establishing an I.Q. score. In addition, they were administered a test for accuracy in perceiving vocal emotion. "Vocalization is here defined as all vocal but nonverbal components of speech comprising what is conventionally called tone of voice."



Ten different vocal emotions were recorded by a male and female speaker and were presented to subjects by each classroom with sex of initial speaker randomly alternated. Because of the range in ages of the subjects, stick figures were used to depict the emotions heard by the children. The figures were drawn such that sex could also be distinguished and they were then matched to the sex of the speaker.

The results, after several TOGA testings over a one year period and comparisons of the I.Q. gains and ability to accurately perceive vocal emotions, tended to fluctuate and decreased at every time interval. However, enough of an increase remained from the first testing to the last that the researchers (Conn, et al., 1968) concluded that the present study indicated that an important factor in the teacher-student interaction process is an ability to perceive nonverbal communication of emotion completely independent of actual content.

Christensen (1960) conducted an investigation which was concerned with pupil achievement relative to pupil affect-need, teacher warmth and teacher permissiveness. The specific hypotheses tested were:

1. Positive affective response (warmth) of teacher is positively related to achievement gains.
2. Permissiveness of teacher is negatively related to achievement gains.
3. Teacher warmth and permissiveness interact significantly such that warm, directive teachers will produce the greatest achievement gains.
4. Affective needs of pupils interact significantly with teacher warmth and permissiveness.

The subjects used were ten fifth grade classes of pupils, ten fourth grade classes and ten fourth grade teachers of a New York state suburban school system.

The instruments used included a Warmth and Permissiveness scale, the items for which were devised, in part, by the author. The remaining items were selected from other scales already in existence. The Affect-Need scale used was one devised by Della Piana and Gage in 1955.

All scales were administered to the fourth grade classes. The Affect-Need scale only was administered to the fifth grade classes. The Iowa Test of Basic Skills had been administered to the fifth grade pupils the first month of their fourth grade year and again the first month of their fifth grade year. Thus, teacher Warmth and Permissiveness scores were derived from the fourth grade pupil responses and growth in achievement was derived from the previous year's fourth grade pupils.

Mean Warmth and Permissiveness scores were obtained for each of the ten teachers. Those teachers having the most extreme scores were classified into four groups of two teachers each. The groups were categorized as High Warmth and Low Permissiveness, Low Warmth and High Permissiveness, High Permissiveness and High Warmth and Low Warmth and Low Permissiveness. The students were then subdivided on their Affect-Need scores and grouped according to teacher.

Covariance analysis was then used to test the hypotheses.

Only two significant results were obtained. Vocabulary and Arithmetic achievement growth were significantly greater for teachers scoring high on the Warmth scale. No significant relationships were obtained for Affect-Need or Permissiveness and none of the interaction terms were significant. Only the first hypothesis was partially substantiated (Christensen, 1960).

The author stated that "results support the contention that affective response of the teacher is more important for growth in achievement than permissiveness."

It should be noted that the author violated several statistical assumptions. The scale in use did not allow the writer to obtain the type of scores necessary for the statistical technique which was applied. Also, Christensen (1960) states that no manipulation of conditions was involved and no random assignment occurred. However, even though questionable statistical procedures were used it does appear that the author did show that a relationship exists between vocabulary and arithmetic achievement and teacher warmth in his investigation. How significant the relationship was is difficult to ascertain, however, there seems to be enough of an indication to warrant further investigation.

Davidson and Lang (1960) conducted an investigation to determine the relationship between children's perception of their teacher's feelings toward them, irrespective of its accuracy, and self-concept, school achievement and classroom behavior. For the purpose of this investigation an instrument had to be developed to measure the variables in question. Thus, the Checklist of Trait Names was developed. The total score yielded by the instrument was termed the Index of Favorability. Reliability and validity checks were made on which a .85 correlation was obtained which indicated a rank difference of  $p < .001$ .

The subjects were 203 children, 89 boys and 114 girls, in the fourth, fifth and sixth grades of a New York City school. The reading ability of the classes was reported to be in the upper half of their respective grade level. The Checklist of Trait Names was administered twice to the children. The first time they were asked to respond to the adjectives on the list in terms of "My teacher thinks I am", and

the second time in terms of "I think I am". In addition, the respective teachers of the classes were asked to rate each child according to academic achievement and behavioral characteristics.

The hypothesis of concern which stated "There exists a positive relationship between favorable perception of teacher's feelings and academic achievement" (Davidson and Lang, 1960) was significant. An F ratio of 15.61 was reported which was significant at less than the .001 level. Also, three t-tests were reported as significant at better than the .01 level.

The implication made by the investigators relative to the hypothesis mentioned suggested that:

it is essential that teachers communicate positive feelings to their children and thus not only strengthen their positive self-appraisals but stimulate their growth, academically as well as interpersonally (Davidson and Lang, 1960).

It should be noted that the researchers violated several statistical assumptions thus making the results obtained questionable. The technique employed was analysis of variance which assumes randomization. The subjects used were neither randomly selected nor assigned. Further, the investigators controlled nothing again making the technique employed invalid. The instrument used did not yield the data necessary for an analysis of variance and the hypotheses were stated such that relationship was indicated rather than cause and effect.

In light of the fact that questionable statistical techniques were employed to analyze the data it is difficult to determine how much can be gleaned from the study. The implication suggested, however, does seem sound enough to warrant further investigation because the authors state that:

It should be emphasized that these findings do not imply causality but rather suggest that certain pupil characteristics, such as self-perception, perceived teacher feelings, achievement and behavior in school are interrelated (Davidson and Lang, 1960).

Silberman (1969) conducted an investigation for the purpose of examining to what extent and in what ways teachers' attitudes toward their students are revealed in the teachers' classroom behavior. Four attitudes held by teachers toward their students were identified by the author. The attitudes were attachment, concern, indifference and rejection.

Attachment is defined as an affectionate tie to students which derives from the pleasure they bring to the teacher's work. Concern signifies sympathy and support for students' academic and/or emotional problems. Indifference refers to a lack of involvement in students because of their failure to excite or dismay their teacher. Rejection indicates a refusal to consider students as worthy recipients of the teacher's professional energies (Silberman, 1969).

Because the study was concerned with public behaviors through which teachers express their attitudes, pilot observations indicated three categories of teacher behavior which might serve as a means of communicating attitudes. The categories were contact which referred to teacher-initiated behavior, positive and negative evaluation which referred to expressions of delight and annoyance concerning the adequacy of the students behavior and acquiescence which referred to the extent to which a teacher was receptive to student-initiated appeals for permission, guidance, information and the like.

The subjects of the study were ten third-grade teachers from five suburban communities in the Chicago area. Each was in charge of a self-contained classroom and each had at least three years of teaching experience.

Data was collected in three phases. Phase I was teacher interviews in which the teachers were asked, in a taped interview, four questions designed to reveal the identity of one student toward whom she held each of the attitudes under investigation. After naming her four choices one boy and one girl was chosen from each class to serve as controls. To insure that the teacher was neutrally disposed toward them she was asked if either one had been considered for any of the questions. If they had another was chosen.

Phase II of the study involved classroom observations. Each class was visited for 20 hours and the visitations were equally divided between morning and afternoon.

The observational technique consisted of recording the occurrences of contact, evaluation, and acquiescence directed toward the students serving as objects of special attitudes and the two controls.

A contact was considered to have taken place if the teacher initiated interaction with a student by gesture or words, or if the teacher prolonged a student-initiated contact beyond 10 seconds. Evaluation was scored in terms of its tone and frequency. Acquiescence was measured by the percentage of acquiescent replies among all replies to student appeals for assistance, permission, information and feedback (Silberman, 1969).

Interjudge reliability had been established on the pilot observations.

Phase III was student interviews. The six students who had been observed were asked a series of questions on which they had to compare themselves to the other five students observed.

The scores obtained in the observations were analyzed by means of a multivariate analysis of variance. The approach used to test multivariate hypotheses was a "stepdown analysis".

When the attachment group was compared to the control group, the former received significantly more positive evaluation. They also

received a significantly greater percentage of acquiescent replies when the effects of contact were controlled. There was no significant difference on contact and on negative evaluation. Further comparisons revealed that concern was more consistently revealed by frequent contact and acquiescence than by frequent evaluation.

In comparison to all the other attitude groups, the indifference group received not only far less contact but also less positive evaluation.

The three main findings that emerged from this study were:

Teachers' attitudes are generally revealed in their actions, in spite of many forces operating to contain their expression.

Different attitudes are translated into action in different ways, such that teachers give some of their attitudes clearer expression than they give others.

Students who receive them are aware of more behavioral expressions of their teachers' attitudes. In addition, many such behaviors aimed at individual students are visible to other students in the class, as well. Thus it is likely that the daily classroom experience of recipient students is significantly altered by teachers' actions which express their attitudes.

#### Summary

It is apparent that studies dealing with nonverbal communication in education are limited. A review of the related literature did reveal, however, that the importance of nonverbal communication in the classroom is being recognized as important thus suggesting the need for further investigations in this area.

Further, the fact that young school age children sometimes have difficulty interpreting vocal messages was specifically pointed out by Dimitrovsky (1964) and Bugental, Kaswan, and Love (1970) and alluded to

by others. This tends to magnify the necessity for finding additional means of communication in an attempt to decrease incongruently interpreted messages.

From a review of the literature, it appears there is a justification for exploring another means of transmitting messages particularly to young school age children. And, because teacher-pupil relationship and achievement seem to be related, it appears there is even a greater justification for exploring the relationship between touch and the achievement of young school age children due to the lack of studies of that nature.



## CHAPTER III

### DESIGN AND METHODOLOGY

#### Introduction

This chapter contains a description of the population of the study, the conduct of the study, the instruments used in collecting the data, observer training procedures and reliability, and data collection and the statistical treatment of the data.

#### Description of the Population

The population for this study consisted of all the first and second grade teachers and their respective students from the Cushing, Pawnee and Perkins Elementary Schools. The population of the towns in which the schools were located are 8,619, 2,303, and 769, respectively. All of the teachers participating in the study had a minimum of two years teaching experience. These schools were selected because of the administrators willingness to cooperate and the willingness of the teachers to be video-taped. The only criterion set by the investigator was that the classrooms be self-contained.

#### Conduct of the Study

The general plan which was employed in the study is outlined as follows:

1. Teachers video-taped for 20 minutes on three separate occasions for a total of one hour.
2. Teachers rated on the basis of type of communication.
3. Administration of the Stanford Achievement Test.
4. Data collected and compared relative to the suggested criteria identified in the hypotheses.

#### Instruments Used in the Study

The rating scale used is an instrument developed by the investigator on which a pilot was run to determine interjudge reliability.

The scale is as follows:

1. Affectional - Body contact of a warm, loving nature, either solicited by or reciprocated by the teacher. This may involve a hug, the holding of a hand, a hand on the shoulder, or the like. Any contact which suggests an affectionate relationship between teacher and child.
2. Directive - Body contact between a teacher and student for the purpose of direction. This may involve turning the students head to regain attention, heading a student in the proper direction, or the like. Any type of contact initiated by the teacher for the purpose of re-directing a students attention.
3. Disciplinary - Body contact between teacher and student for the purpose of discipline. This may involve spanking, abruptly pulling a child out of his chair or seating him in the same manner, or the like. Generally, this would involve any contact made between the student and the teacher for the purpose of discipline.

The rating was executed such that each time a teacher exhibited an action commensurate to the categories contained on the scale the observer marked in the appropriate category and distinguished between sex of child to which the action was directed.

Stanford Achievement Test: Primary I  
Battery, Form W (1964)

This test was used to measure reading achievement of the first grade students. The subtests which were used to obtain this measure are Word Reading, Paragraph Meaning, and Vocabulary. The Word Reading subtest consists of 35 items which measure a pupil's ability to analyze a word without the use of context. Paragraph Meaning consists of a series of paragraphs from which one or more words have been omitted. The pupil must choose the correct word from four choices which demonstrates his comprehension ability. The Vocabulary test requires the student to choose a correct answer from three alternatives which best answers a statement or question read by the teacher (Kelley, Madden, Gardner, and Rudman, 1964).

The standardization of the test was based on approximately 10,000 pupils from each of grades one through three. To insure content validity, the authors of the instrument examined courses of study and textbooks as a basis for determining the understandings, knowledge and skills to be measured. Odd-even split-half reliability coefficients of .85 for Word Reading, .90 for Paragraph Meaning, and .79 for Vocabulary were reported for grade one (Kelley, et al., 1964).

Stanford Achievement Test: Primary II  
Battery, Form W (1964)

This test was used to measure reading achievement of the second grade students. The subtests which were used to obtain this measure are Word Meaning and Paragraph Meaning. The Word Meaning subtests consists of 36 multiple choice items which requires that the child be able to read a sentence and choose a correct word to complete the sentence. The items are graduated in difficulty. Paragraph Meaning consists of a series of paragraphs from which one or more words have been omitted. The pupil must choose the correct word from four choices which demonstrates his comprehension ability (Kelley, et al., 1964).

The standardization procedures for the Primary II Battery are the same as for the Primary I Battery which are reported in the preceding description. Odd-even split-half reliability coefficients of .85 for Word Meaning and .93 for Paragraph Meaning were reported for the second grade.

#### Observer Training

It was necessary to train judges to use the scale developed to establish reliability. Three students attending Oklahoma State University and persuing an advanced degree in education were asked to participate. All the judges had taught in public schools for at least one year.

A pilot video-tape was made for the purpose of training. The subjects used for the pilot were not used in the study. Enough tape was made so that the investigator could train the judges prior to their rating the pilot individually. The observations were recorded on tally

sheets provided. The sheets listed each category and provided a space for marking (Appendix).

Each time the observers viewed an action exhibited by the teacher commensurate to the description of any category they placed a mark in that category and distinguished between sex of student to which the action had been directed.

#### Observer Reliability

Scott's Coefficient was used to estimate observer reliability. The advantages of using Scott's Coefficient is that it can be used with low frequencies, in figuring percentages, works well for rapid calculation, and it is sensitive at high levels of reliability. The name of the coefficient is "pi" and it is calculated from the following formula:

$$\pi = \frac{P_o - P_e}{1 - P_e}$$

The porportion of agreement between observations made of the same teacher by different observers is  $P_o$ .  $P_e$  is the proportion of agreement expected by chance. The chance factor is found by squaring the proportion of frequencies in each category and summing these over all categories.

$$P_e = \sum_{i=1}^k P_i^2$$

In this formula there are  $k$  categories and  $P_i$  is the proportion of tallies falling into each category. With references to "pi" in the

previous formula, it can be expressed in words as the amount that two observers exceed chance agreement divided by the amount that perfect agreement exceeds chance (Flanders, 1966).

The pertinent data relating to observer reliability is found in Table I.

TABLE I  
SUMMARY OF OBSERVER RELIABILITY

	Total	Affectional	Directive
Beginning	.7979	.9395	.8584
Middle	.8195	.9550	.8629
End	.8625	.94340	.8371

#### Data Collection

The teachers were video-taped for 20 minutes on three separate occasions for a total of one hour. Each was taped the first 20 minutes of the school day, the first 20 minutes after lunch break and the last 20 minutes of the school day. There was no sound involved in the taping sessions. The administrators were told the nature of the investigation but were asked not to reveal that information to the teachers. It was felt that complete knowledge by the teacher would influence their interaction with the students.

Three judges were trained to use the instrument and developed .778 observer reliability. Each judge viewed the tapes made of the teachers and rated the teachers according to the criteria established by the scale. After the tapes were viewed and the tally sheets were collected the ratings of the teachers were dichotomized into two categories. The Stanford Achievement Test was then given by the teachers to their respective classes after all the tapes were made. The data obtained from each instrument was analyzed by the investigator.

#### Statistical Design

The statistical test employed in the study was the Point-Biserial Correlation. To meet the requirements of the test the ratings of the teachers were dichotomized into either affectional or directive categories. Mean scores for each class were calculated from the results of the Stanford Achievement Test. The mean class scores and the ratings were used to determine the coefficient of relationship.

The formula for the point-biserial correlation is: (Bruning and Kintz, 1968)

$$r = \frac{Y_1 - Y_0}{S_y} \sqrt{\frac{N_1 N_0}{N(N-1)}}$$

To test the significance of the computed  $r$  the  $t$ -test was used following the formula: (Bruning and Kintz, 1968)

$$t = r \sqrt{\frac{N-2}{N-r^2}}$$

In addition, the same procedure was utilized on the means of each individual subtest given and teacher ratings to determine if a relationship exists between specific skills being tested and a teacher's non-verbal behavior.

The statistical test employed to determine the degree of relationship between type of touch and sex of student was the "phi" coefficient. A chi-square test was used to establish whether the variables were related.

The formula for the phi coefficient is: (Bruning and Kintz, 1968)

$$\text{phi} = \frac{AD - BC}{\sqrt{(A+B)(C+D)(A+C)(B+D)}}$$

The formula for  $X^2$  is: (Bruning and Kintz, 1968)

$$X^2 = \frac{N (AD - BC)^2}{(A+B)(C+D)(A+C)(B+D)}$$

Interjudge reliability was reported on the instrument used which was devised by the investigator. A description of the data collecting procedures were included along with an account of the method used by which the teachers were taped and rated.

The statistical procedures used in the study were presented. This involved a description of the technique used for obtaining interjudge reliability and the techniques used for analyzing data obtained from the measuring devices.



## CHAPTER IV

### TREATMENT OF DATA AND ANALYSIS OF RESULTS

This study was concerned with the relationship between the type of touch exhibited by teachers and the reading achievement scores of students in the first and second grade. It included the categorization of type of touch demonstrated in a classroom situation at three different times during the day. The results obtained from the reading section of a standardized test were analyzed and matched to the category applicable for each respective teacher. The two groups of scores were used to determine the relationship sought.

Initially, the marking scale included three categories into which type of touch could be categorized. However, as the judges viewed the video tapes of the teachers it was found that there were no exhibitions of disciplinary touch thus that category was not considered in the correlation computation. The decision as to which of the remaining categories each teacher was placed was made on the basis of the number of types of touch exhibited. That is, the category having fifty percent more of one type of touch than the other determined the category into which the teacher was placed.

### Tests of the Hypotheses

Hypothesis 1: There is no significant relationship between type of touch by the teacher as measured by the instrument and reading achievement scores of first and second grade students.

To test this hypothesis a point biserial correlation was computed between the class means obtained from the reading subtests of the Stanford Achievement Test and the type of touch exhibited by the teacher. A separate correlation was computed for each of the reading subtests. The level of confidence for  $r_{pb}$  was set at the .05 level which requires .444 to be considered significant. The relevant data is reported in Table II.

TABLE II

SUMMARY OF DATA FOR THE TEST OF SIGNIFICANT RELATIONSHIP BETWEEN TYPE OF TOUCH AND READING ACHIEVEMENT

WORD RECOGNITION	PARAGRAPH MEANING
$r_{pb} = .342$	$r_{pb} = .082$
df = 18	df = 18
t = 1.544	t = 1.544
$p > .05$	

The  $r_{pb}$  for testing this hypothesis was .342 for Word Recognition and .082 for Paragraph Meaning. With an N of 20 and a value of .444 needed for rejection of the hypothesis at the .05 level of confidence, the null hypothesis was not rejected.

Hypothesis 2: There is no significant relationship between type of touch by the teacher and sex of the student.

To test this hypothesis a phi-coefficient was computed between the sex of the student and the type of touch exhibited by the teacher. The phi-coefficient showed the degree of relationship between the two variables. A chi-square was then computed to determine if the variables were related. The relevant data is reported in Table III.

TABLE III

SUMMARY OF DATA FOR THE TEST OF SIGNIFICANT RELATIONSHIP BETWEEN TYPE OF TOUCH AND SEX OF STUDENT

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phi = .09959

$x^2 = 12.7942$

$p < .001$

---

The  $x^2$  for testing this hypothesis was 12.7942. Because a 3.8 was needed for rejection at the .05 level of confidence and that value was exceeded the hypothesis was rejected.

### Supplementary Analysis of Data

Previous analysis of the data collected revealed that one of the null hypotheses of the study was accepted and one null hypothesis was rejected. A supplementary analysis was made on part of the results obtained which applied to the hypothesis that there is no significant relationship between type of touch and reading achievement of first and second grade students.

The supplementary analysis was done on the Vocabulary subtest of the Stanford Achievement Test, Primary I Battery. This was conducted because the Primary II Battery of the Stanford includes no Vocabulary subtest which pertains to reading. The point biserial test was used to analyze the data. The procedure was the same as was reported previously in the main analysis. The relevant data is reported in Table IV.

TABLE IV

SUMMARY OF DATA FOR THE TEST OF SIGNIFICANT RELATIONSHIP BETWEEN TYPE OF TOUCH AND READING ACHIEVEMENT

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VOCABULARY		
$r_{pb} = .0980$	$t = .283$	$df = 8$
	$p > .05$	

---

The  $r_{pb}$  for testing this hypothesis was .0980 for Vocabulary. With an N of 10 and a value of .444 needed for rejection of the hypothesis at the .05 level of confidence, the null hypothesis was not rejected.

#### Summary

This chapter has presented the statistical results from the treatment of the data. Point biserial correlations were used to indicate the relationship between type of touch and reading achievement as indicated by the Word Recognition, Paragraph Meaning and Vocabulary subtests of the Stanford Achievement Test. No significant relationships were found to exist. The null hypothesis was not rejected.

A phi coefficient was used to indicate the relationship between type of touch and sex of the student. The analysis indicated a significant relationship. The null hypothesis of no relationship was rejected.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

#### General Summary of the Investigation

This study was concerned with the relationship between type of touch exhibited by teachers and the reading achievement of first and second grade students. The sample consisted of twenty teachers, ten first grade and ten second grade and their respective students. The teachers were video taped three different times for a total of one hour each. The tapes were viewed by judges trained to categorize the type of touch exhibited by the teacher. The students were given the appropriate battery of the Stanford Achievement Test.

The rating scale devised allowed for touch to be categorized in three ways; affectional, directive, and disciplinary. Only two of the categories were used. During the viewing sessions it was apparent that no disciplinary action was being exhibited. Disciplinary touch was defined as body contact for the purpose of discipline and suggested spanking as an example. The teachers were aware that they were being taped and that the tapes would be viewed by observers. This could account for no exhibition of disciplinary action. The scale also allowed for the indication of the sex of the student to whom the touch was directed.

Only the reading subtests of the Stanford Achievement Test were used. From the results, class means were determined. Point biserial correlations were used to analyze the results of each subtest to determine the relationship between type of touch and reading achievement.

To analyze the relationship between sex of the student and type of touch a phi coefficient was computed. A chi square was then computed to determine the significance of the relationship.

### Conclusions

Results of the study indicate that there is no significant relationship between type of touch exhibited by the teacher and reading achievement as measured by the Word Reading, Paragraph Meaning or Vocabulary subtests of the Stanford Achievement Test. The analysis of the Paragraph Meaning subtest did approach significance ( $.20 > p > .10$ ).

The statistical test used to analyze the data obtained necessitates a large sample. The current sample involved only twenty teachers which could account, in part, for the inability to obtain significance.

Results of the analysis involving the relationship between type of touch and the sex of students proved significant beyond the .001 level of confidence. This suggests that there is a positive relationship between the sex of the student to whom the touch is being directed and the type of touch exhibited.

### Recommendations

1. It is recommended that the study be replicated using a larger sample of teachers. The statistical technique employed for analysis of

the data necessitates a large sample. Although the number used was within acceptable limits of the technique, it is the opinion of the writer that a larger teacher sample would lend itself to significance.

2. It is recommended that an experimental study be conducted involving teacher training sessions for the experimental group. Within a design of this nature many of the influencing extraneous variables could be accounted for and possibly controlled.

3. It is recommended that the scale in use be refined before replication of the present study to include the visual, vocal, facial and tactile components of nonverbal communication. The inclusion of only three categories did not allow for a definitive enough breakdown of types of touch exhibited by teachers. Further, no exhibitions of disciplinary touch were demonstrated. This could be accounted for, in part, by the fact that the teachers knew they were being videotaped.

4. It is recommended that the video-taping be done without teachers knowledge. This procedure would more nearly approach taping a normal classroom. The teachers would be more likely to react to the children normally if knowledge of observation were not known.

5. It is recommended that further research be directed more specifically to the sex of the child to whom the touch is directed. The present study found a significant relationship between sex of student and touch. However, due to the statistical technique employed analysis of which sex received significantly more touch was done.

When just counting the number of times touch was demonstrated the boys received almost twice as much touch as girls but it was equally distributed between affectional and directive. The girls, although



receiving only half as much touch, received twice as much affectional touch as directive. Though nothing can be said about this statistically, on one hand the myth of teachers preferring girls does not hold true. On the other hand, because as much affectional touch as directive is given boys this may suggest still another conflicting message which could account for the unreasonable percentages of boys who fail in reading. Thus it seems that there is justification for examining sex differences as they relate to type of touch. It is also recommended that further research be directed to sex of student and reading achievement

## BIBLIOGRAPHY

- Bruning, J. L., & Kintz, B. L. Computational Handbook of Statistics. Atlanta: Scott, Foresman & Co., 1968.
- Bugental, D. E., Kaswan, J. W., & Love, L. R. "Perception of Contradictory Meanings Conveyed by Verbal and Nonverbal Channels." Journal of Personality and Social Psychology, 1970, 16 (4), 647-655.
- Christensen, C. M. "Relationships Between Pupil Achievement, Pupil Affect-Need, Teacher's Warmth and Teacher Permissiveness." Journal of Educational Psychology, 1960, 51 (3), 169-174.
- Conn, L. K., Edwards, C. N., Rosenthal, R., & Crowne, D. "Perception of Emotion and Response to Teacher's Expectancy by Elementary School Children." Psychological Reports, 1968, 22, 27-34.
- Davidson, H. K., & Gerhard, L. "Children's Perceptions of Their Teachers' Feelings Toward Them Related to Self-Perception, School Achievement and Behavior." Journal of Experimental Education, 1960, 29 (2), 107-117.
- Dimitrovsky, L. "The Ability to Identify the Emotional Meaning of Vocal Expressions at Successive Age Levels," in Davitz, J. R. The Communication of Emotional Meaning. New York: McGraw-Hill, 1964.
- Flanders, N. A. Interaction Analysis in the Classroom: A Manual for Observers. Ann Arbor: University of Michigan, 1966.
- French, R. L., & Galloway, C. M. "A Description of Teacher Behavior: Verbal and Nonverbal." Unpublished doctoral dissertation, Ohio State University, 1968.
- Galloway, C. M. "Nonverbal: The Language of Sensitivity." Theory into Practice, 1971, 10 (4), 228.
- Galloway, C. M. "Teacher Nonverbal Communication." Educational Leadership, 1966, 24.
- Hayes, A. S. "The Paralinguistics and Kinesics: Pedagogical Perspectives," in Sebeok, T. A., Hayes, A. S., & Bateson, M. G. (Eds.) Approaches to Semiotics. The Hague: Mouton, 1964.
- Kelley, R. L., Madden, R., Gardner, E. F., & Rudman, H. C. Stanford Achievement Tests. New York: Harcourt, Brace & World, 1964.

- Koch, R. "The Teacher and Nonverbal Communication." Theory into Practice, 1971, 10 (4), 233-34.
- Silberman, M. L. "Behavioral Expression of Teachers' Attitudes Toward Elementary School Students." Journal of Educational Psychology, 1969, 60 (5), 402-407.
- Victoria, J. J. "An Investigation of Nonverbal Behavior of Student Teachers." Unpublished doctoral dissertation, Pennsylvania State University, 1970.

APPENDIX

TALLY SHEET

Time of Day \_\_\_\_\_

	Boy	Girl
Affectional	Total _____	Total _____
Directive	Total _____	Total _____
Disciplinary	Total _____	Total _____

VITA

DeLyte J. Tatro Pratt

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Doctor of Education

Thesis: THE RELATIONSHIP BETWEEN TYPE OF TEACHER NONVERBAL COMMUNICATION AND FIRST AND SECOND GRADE READING ACHIEVEMENT

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