The Facilitative Teacher-Student Relationship and Selected Educational Outcomes

Richard Roy Benedict
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THE FACILITATIVE TEACHER-STUDENT RELATIONSHIP
AND SELECTED EDUCATIONAL OUTCOMES

by

Richard Roy Benedict

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THE FACILITATIVE TEACHER-STUDENT RELATIONSHIP
AND SELECTED EDUCATIONAL OUTCOMES

Richard Roy Benedict, Ed.D.
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It has been proposed that there are three "facilitative" characteristics of the helpful relationship—genuineness, empathy, and positive regard—which, if offered to students by teachers, would result in desirable educational outcomes. This study was conducted to investigate the relationship between teacher facilitative functioning and desirable outcomes of the educational process in secondary schools. Four desirable outcomes were identified: (a) enhanced student self-concepts, (b) student course achievements, (c) more "in-depth" involvement with course content, and (d) more frequent class attendance.

Sixty-eight classrooms (containing over 1,500 senior high school students from four school districts) qualified for study because required subjects were taught within them and they were open to all students. Students described their relationship with their teachers by completing the Barrett-Lennard Relationship Inventory and described themselves using a 10-scale Semantic Differential during the second and 15th weeks of the semester. Teacher judgments of the "quality" and "quantity" of students' coursework were collected near the end of the semester; as were student reports of class activities (associated with "lower" and "higher" level cognitive objectives) and student attendance data.
It was found that: (a) There is a direct relationship between teacher facilitative functioning and students' classroom self-concepts. (b) There is a direct relationship between teacher facilitative functioning and teacher judgments of the "quantity" and "quality" of student coursework, although it is unclear whether actual student performance or teacher generosity is chiefly responsible for this outcome. (c) There is an inverse relationship between emphasis on class activities associated with lower level cognitive objectives and teacher facilitative functioning. However, no support was found for the hypothesis that a direct relationship exists between teacher facilitative functioning and emphasis on class activities associated with higher level cognitive objectives. (d) No support was found for the hypothesis that teacher facilitative functioning and student classroom attendance are directly related for all students. However, for those students who exercise more discretion with respect to school attendance—juniors and seniors who typically perform below average in their coursework—there is a direct relationship between teacher facilitative functioning and class attendance.

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DEDICATION

To Father and Mother
If I have all the eloquence of men or of angels, but speak without love, I am simply a gong booming or a cymbal clashing. If I have the gift of prophesy, understanding all the mysteries there are, and knowing everything . . . but without love, then I am nothing at all.\(^1\)

--1 Corinthians 13:1-3

I am grateful to the people in my life who have helped me reach this goal: My parents, Boyd Benedict and Mary Benedict-Kimble; my brother, Mike; my sister, Toni Benedict-McFarland; my most influential teacher, Cecil Williams; my wife, Catherine Benedict; my children, Matthew and Mark; my eternal friends; my inspirational colleagues; and my kindred spirits.

I am also grateful to key persons who helped me with this study: the teachers and students who participated in it; my committee members, Dr. Uldis Smidchens (chairperson), Dr. Robert Betz, and Dr. Carol Payne Smith, who contributed time and thoughtful support throughout its planning and completion; Dr. David Aspy and Dr. Flora Roebuck, who unselfishly supported a person they'd never met by reading and commenting on proposals and evaluating instructional tapes; Dr. Robert Hamet, my superintendent, who whole-heartedly encouraged the process and the goal of research and achievement; Lee Pakko, whose expertise and contributions went above and beyond expectations to include editing this work; and Larry Matecki, who said it was good when I needed to hear that, and made it better by his thoughtful comments.

Richard Roy Benedict
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CHAPTER I

THE PROBLEM

The Foundations

In 1956 Rogers (1957) formulated his theory of "The Necessary and Sufficient Conditions of Therapeutic Personality Change." Essentially, he posited that in the therapeutic environment, if a client experiences the therapist as a genuine person, with empathic understanding who possesses unconditional positive regard for the client, "then . . . change and constructive personal development will invariably occur" (Rogers, 1961, p. 35).

Even as his theory was being tested and affirmed in the fields of counseling and psychotherapy, Rogers (1959) began asserting that this same facilitative relationship—characterized by genuineness, empathy, and positive regard—would facilitate significant learning in education. At first his assertions were tentative. In time, however, he became quite bold in maintaining that the mechanics of teaching—teaching skills, scholarly knowledge, curricular planning, audiovisual aids, programmed learning, lectures, presentations, books, etc.—were not the facilitative agents of significant learning. Rather, he asserted "the facilitation of significant learning rests upon . . . the personal relationship between the facilitator and the learner" (Rogers, 1969, p. 108).
The Problem

Investigations attempting to discern the nature of the relationship between the facilitative functioning of teachers and desirable outcomes of the educational process have been, for the most part, encouraging. Before Rogers articulated three characteristics of the facilitative relationship, educational researchers were already exploring the connection between the positive teacher-student relationship and classroom gains (Cronbach, 1963). Still, the descriptive variables in this early research were not necessarily synonymous with the relationship variables identified by Rogers. Not until the works of Aspy and Roebuck (1977) were Rogers's relationship variables operationalized in a manner that permitted hypothesis testing.

While Aspy and Roebuck have demonstrated the existence of a positive link between the facilitative functioning of teachers and desirable outcomes of the educational process, their research has taken place primarily in elementary settings. Since the works of several other researchers have pointed to a difference between the way elementary and secondary students respond to teacher warmth variables (Lewis, Lovell, & Jessee, 1965; Reed, 1961; Ryan, 1961a, 1961b), it is inappropriate to assume that the relationships Aspy and Roebuck (1977) found in elementary settings will necessarily occur in secondary settings.

Furthermore, of those studies carried out in secondary schools, none is without equivocation. For these reasons the question, "What is the relationship between the facilitative functioning of teachers
and desirable outcomes of the educational process in secondary schools?" remains largely unanswered. It is this question that this dissertation addresses.

Parameters of the Problem

The Independent Variables

Rogers names the facilitative teacher-student relationship as the antecedent upon which realizing desirable goals of the educational process rests (Rogers, 1969). Three teacher behaviors constitute teacher facilitative functioning—genuineness, positive regard, and empathic understanding. In her landmark investigation of "Dimensions of Therapist Response as Causal Factors in Therapeutic Change" Barrett-Lennard (1962) adequately defined these three therapeutic variables. This study employs the definitions offered by Barrett-Lennard.

Genuineness refers to the extent to which one person is functionally integrated in the context of his or her relationship with another; such that there is an absence of conflict or inconsistency between his or her total experience, his or her awareness, and his or her overt communication. Level of regard refers to the affective aspect of one person's response to another— including various qualities and strengths of positive and negative feeling. Empathic understanding is present when one person is conscious of the immediate awareness of another; it is concerned with experiencing the process and content of another's awareness in all its aspects. Facilitative
functioning refers to the integration of these three aforementioned behaviors—genuineness, positive regard, and empathic understanding—in one's behavioral repertoire; it is a composite variable defined by the degree to which its constituents are present in one's functioning. This composite variable—facilitative functioning—is the independent variable of this research for purposes of hypothesis testing and discussion.

Desirable Outcomes of the Educational Process

While there is no unanimity about which outcomes of the educational process are most desirable, several outcomes are consistently identified in the literature. According to Martin (1979), educational researchers were myopically concerned with a single outcome of the educational process during the entire first half of the 20th century—academic achievement. This outcome is clearly associated in the public's mind with the purpose of education ("Help!", 1980). For purposes of this research academic achievement refers to gains in knowledge one achieves in the course of learning. This desirable outcome of the educational process will be treated as one of the dependent variables of this research.

While academic achievement is clearly a desirable outcome of the educational process, critics of the myopic emphasis of this outcome point out that other outcomes are also desirable (Martin, 1979). Knowing "about" things, it has been said, does not necessarily lead to productive, satisfying maturity (Holt, 1964; Rogers, 1961, 1969, 1974). For this reason, other desirable outcomes of the educational
process have been gaining attention during the past two decades (Martin, 1979). The relationships between teacher facilitative functioning and these other desirable outcomes of education in secondary schools were also investigated in this dissertation.

The enhancement of students' self-evaluations has become an increasingly important goal of educators (Martin, 1979). This is because a positive evaluation of one's self seems related to many positive outcomes of living (Purkey, 1970), and a negative evaluation of one's self "is crippling to the individual" (Kelley, 1962, p. 10).

For purposes of this research self-concept refers to one's perception of the person one is in relation to other persons, tasks, and/or roles (Kelley, 1962). In this dissertation the terms self-assessment, self-evaluation, and self-concept declarations will be used interchangeably to refer to the subjective evaluation of the person one is in relation to other persons, or in the context of certain situations. The enhancement of students' self-evaluations will be treated as one of the dependent variables of this research.

It is generally accepted that there are shallower and deeper levels of learning (Holt, 1964; Rogers, 1969). Bloom (Bloom, Englehart, Furst, Hill, & Krathwohl, 1956) taxonomized cognitive objectives of learning to reflect this reality. By this taxonomy Bloom et al. (1956) declared that memorization of factual information was the shallowest level of cognitive functioning. On the way to the evaluation level (the highest level of cognitive functioning identified by Bloom et al., 1956) one passes through the cognitive functions translation, interpretation, application, analysis,
and synthesis—where each successive level of cognitive functioning is considered to represent a higher level of cognitive understanding.

While it is assumed that in all subjects some memorization of factual information will be necessary, it is generally accepted that deeper understandings of concepts and relationships is associated with what could be termed "subject mastery." This is the same as saying that the higher one climbs on the taxonomy of cognitive objectives in relation to a course of instruction, the deeper one understands the subject matter of that course. For this reason, one expects that higher levels of cognitive functioning relate to deeper understandings of subject matter—an outcome of the educational process that most would agree is desirable. This outcome will be treated as another dependent variable of this research.

Most educators would agree that school attendance is a desirable pupil behavior. Logically, attendance would seem to be a precursor of any other outcome of the educational process. If students lived in a world where there was an absence of negative sanctions that "forced" class attendance, it could be assumed that when students attended classes, they did so because that experience was rewarding for them in some way. Since there are probably some negative sanctions imposed on most students for missing class, class attendance cannot be unequivocally related to personal satisfaction. Still, in secondary schools especially, students' exercise of their prerogative to miss class—within attendance policy limits—is evidently on the increase ("Help!", 1980). Therefore, class attendance can be taken to be a manifestation of student satisfaction to some degree. Class
attendance will, therefore, be treated as a desirable outcome of the educational process—the fourth and final dependent variable of this research.

Research Hypotheses

The facilitative teacher-student relationship is the independent variable of this research. This special relationship is characterized by the student's perception that the teacher is a genuine person who has empathic understanding of the student and offers the student unconditional positive regard. It is hypothesized that there is a direct relationship between this facilitative teacher-student relationship and (a) student academic achievement, (b) student self-concept declarations, (c) levels of cognitive functioning, and (d) class attendance.

A review of the previous research efforts which were intended to shed light on the nature of the relationship between facilitative teacher functioning and desirable outcomes of the educational process will be presented in the next chapter.
CHAPTER II

A REVIEW OF THE RELEVANT LITERATURE

The Early Work

As with all things, it is difficult to find a beginning to the wonderings about the impact of the teacher-student relationship on the outcomes of the educational process. The first citations that surface in the literature emerged just after the end of World War II. Summarizing the findings of this early work, Roebuck (1975) reported:

Educational researchers, using various rubrics, have long deliberated this relationship between the teacher's interpersonal interactional skills and classroom achievement. At first researchers dealt with generalized descriptive variables or characteristics such as "warmth," "integrative vs. dominative teachers," or "group-centered vs. teacher-centered climates." Even so, evidence began to mount that the level of interpersonal interactional skills offered in the classroom positively related to such pupil outcomes as spontaneous, cooperative, and self-directed behavior (Anderson, Brewer, & Reed, 1946), group problem-solving (Rehage, 1948), sociometric structure (Bovard, 1951), original poetry and art (Cogan, 1958), proficiency in vocabulary skills and arithmetic (Christensen, 1960), academic achievement and readiness to accept responsibility for (one's) actions (Heil, Powell, & Fiefer, 1960), and amount of interest and effort undertaken in school work (Reed, 1961). Cronbach summarized the results of this early work: The classroom setting (social and emotional) directly affects what the pupil tries to do and what he learns . . . (Cronbach, 1963). (Roebuck, 1975, p. 10)

An early study not mentioned by Roebuck (1975) was conducted by Fults (1948). In that research, Fults worked closely with three home economics teachers over a 5-month period of time. The emphasis of the experimenter's work with the teachers was to further good human
relations in their classrooms. The classrooms and some of the individuals within the classrooms were studied to determine what affects this emphasis had on them. Fults reported that when emphasis was placed on furthering good human relations, children showed significant improvements in growth and development.

Among weaknesses, this study (although designated an experiment) was conducted without control groups; students "selected" for intensive study were not randomly selected (nor were their teachers); there was no articulation of the specific outcomes expected; no instrumentation was used to assess degrees of independent and dependent variables present before, during, or after the study; no data were reported; no mention was made of the critical levels which bounded "significance"; and no hypotheses were presented.

While these are serious omissions, one should be careful not to dismiss what is valuable in this work. This is a case study of successes with students who have had some learning difficulties. There is evidence that success was accompanied by what the author calls "an emphasis on a human relations approach to teaching" (p. 307). Though one may not be able to dismiss other influences on these successes, she presents a plausible case for accepting her contentions that a human relations approach to teaching is effective with selected learners.

In 1958, Cogan reported his landmark research on "The Behavior of Teachers and the Productive Behavior of Their Pupils." Two dependent outcomes were selected—(a) amounts of required work completed and (b) self-initiated work completed—because of their hypothesized
proximity to pupil change, growth, and development, and the relative ease with which they could be measured. Three teacher behaviors—
inclusiveness (integrative, affiliative, and nurturant behavior),
preclusiveness (dominative, aggressive, rejectant behavior), and conjunctiveness (explicitness of demands, ability to communicate, and competence in classroom management)—were taken as the independent variables.

This study was conducted in five public junior high schools. Nine hundred and eighty-seven eighth-grade pupils and 33 teachers participated. Pupil reports of their productive behavior and pupil perceptions of teacher behavior were taken as indices of the independent and dependent variables. Cogan (1958) reported finding a significant relationship between the individuals' reports of productive behavior and their reports of the teacher's inclusiveness. When classes were grouped and scores averaged, teacher inclusiveness continued to be associated with productive pupil behavior. While one may be confident that this study was skillfully and carefully conducted, and that the analysis was accurate and painstakingly thorough, one should be cautious not to conclude that teacher inclusiveness causes productive student behavior.

Cogan pointed out that there is a consistent tendency for pupils who say they are behaving productively to report that their teachers are behaving inclusively. When this tendency is accounted for, and its influence on class means corrected, the F-values associated with the variance of class means on the criterion variables diminishes, although remaining significant. This suggests that the composition

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of the class—the predilection of its members for participation in learning activities—may account for group reports of teacher inclusiveness. After explaining that this is an unavoidable weakness associated with field research, Cogan (1958) offers reassurance "that some portion of the differences in the amounts of work reported by groups may be attributed to differences in the groups' perceptions of the teacher's inclusiveness" (p. 118).

Research conducted and reported by Christensen (1960) contributes further to the understanding of the relationship between teacher warmth and pupil achievement. Ten fourth-grade classes of students, 10 fifth-grade classes of students, and 10 fourth-grade teachers participated in this study. Christensen contended that pupil affect need would interact with teacher warmth to affect pupil achievement. Specifically, he suggested that those students with higher affect needs would respond most positively to teacher warmth, while those with lower affect needs would respond less dramatically to that gift. Moreover, Christensen hypothesized that teacher permissiveness would retard achievement so that warm, directive teachers would produce the greatest achievement gains.

The 10 classes of fourth-grade pupils were given warmth, permissiveness, and affect-need scales to complete. Items were read to pupils. Achievement scores were obtained from the sample of fifth-grade students—last year's fourth graders. This group was given the affect-need scale as well. When correlated, only student estimates of teacher warmth were significantly related to vocabulary and arithmetic achievement. It should be noted that eight other indices of
achievement from the Iowa Tests of Basic Skills showed no significant relationship to teacher warmth.

In another often-cited study, Davidson and Lang (1960) demonstrated that there is a positive correlation between children's perceptions of their teachers' feelings toward them (chosen as the independent variable of this research) and their self-perceptions, academic achievement, and desirable classroom behavior. An adjective checklist was carefully constructed and administered to 213 fourth-, fifth-, and sixth-grade New York City public school children. This adjective checklist enabled the respondents to describe themselves as their teachers saw them, and as they saw themselves.

Since the work of Davidson and Lang is often cited as evidence that teachers' perceptions of students influence students' self-perceptions, academic achievement, and classroom behavior, it is important that one be very clear about what this study did, and did not, demonstrate. In essence, this study correlated four variables, any of which could have been designated "independent." This being the case, one could as easily conclude that academic achievement influences students' self-perceptions, their perceptions of their teachers' feelings toward them, and their classroom behavior. Likewise, one could give "classroom behavior" independent status and suggest the other three variables depend upon the levels of this variable exhibited by students, etc.

In the absence of the controls found in experimental designs, it would have been helpful if the authors had accounted for the covariance of these variables in some way in their analysis of the data.
Without control for these covariants, it is inappropriate to say more than, "these variables go together in some significant way."

In a provocative pair of studies reported in 1961, Ryans observed data which indicated that among elementary school classes there is a high, positive correlation between observers' assessments of "productive pupil behavior" and understanding, businesslike, and stimulating teacher behavior. Simultaneously, this same teacher behavior was found to be associated only slightly positively with observers' assessments of "productive pupil behavior" in secondary schools.

In these studies, data from over 2,000 elementary and secondary school classes, widely scattered geographically, were collected and analyzed. The classroom activities of pupils were directly observed by trained and experienced observers. In one study, teacher behavior was assessed and recorded by the same observers. In the second, teachers responded to a self-report type inventory made up of items intended to estimate teacher characteristics which were identified as understanding vs. aloof, businesslike vs. slipshod, and stimulating vs. routine.

The finding that relationships between pupil behavior and teacher behavior were less discernible in secondary school classes as compared with elementary school classes suggests one be cautious in generalizing from the results of elementary school studies to secondary school practices. Other secondary school studies (Brookover, 1955; Lewis et al., 1965) also reported that the effects of teacher-offered warmth are not the same in secondary schools as they are in elementary
schools. Their findings reinforce the need to be cautious in generalizing to secondary schools from elementary studies.

In a collation of four studies that were selected because they were mature in design, treated teacher warmth as an antecedent variable, and used pupil change as the dependent variable, Reed (1961b) made the case that teacher warmth relaxes interpersonal tension between student and teacher, thereby facilitating comprehensive and/or attitudinal pupil change. Because of Brookover's (1955) finding of a moderate, negative correlation between pupils' rating of warmth of teacher relationships and the subject-matter achievement criterion, Reed (1961b) posited that "when the criteria are informational in nature . . . there will be low correlations or a negative relationship" (p. 333).

Reed based his conclusions about the impact of teacher warmth on comprehensive or attitudinal pupil change criterion on a previous study of his own (Reed, 1961a), and two other studies conducted by McCall (1952) and Cogan (1958). In his research, Reed administered an instrument intended to measure student perceptions of teacher behaviors which relax interpersonal tension and the Reed Science Activity Inventory to 1,045 ninth-grade boys and girls and their 38 general science teachers from 19 public schools. He reported strong, positive correlations between teacher warmth and pupil interest in science using the classroom as the unit of analysis.

McCall's (1952) study is celebrated by Reed (1961a) as "one of the most exacting and comprehensive in the field of teacher competence" (p. 332). McCall's sample included 73 sixth-grade teachers.
and 2,164 pupils from rural and urban schools. After obtaining weak positive, negative, and no relationships for the criterion (comprehensive pupil growth) and many other traits, McCall found that pupils' judgments of teachers' kindness was one moderately strong predictor of pupil growth. Cogan's (1958) research was reviewed earlier in this section. To reiterate, he found that teacher inclusiveness was associated with productive pupil behavior.

In addition to McCall's postulations about the effects of teacher warmth on comprehensive/attitudinal criterion vs. informational/achievement criterion, Reed (1961b) speculated that teacher warmth may interact with student age, with the effects being more positive during earlier ages and negative during later ages. If this speculation were true, it would help account for the disparity between outcomes found in secondary vs. elementary schools in this collation, and in other studies identified earlier (Lewis et al., 1965; Ryans, 1961a, 1961b).

While no study is without error, Reed selected four of the outstanding studies in the field to collate. It is with greater confidence that one may be satisfied that teacher warmth is an antecedent to the personal pupil change criterion he identified in his writing (Reed, 1961b). It may be premature, however, to accept his postulations about the absence of significant informational/achievement variations associated with the presence of teacher warmth. Similarly, one may wish to reserve judgment on his speculations about the interaction of age with teacher warmth until more information is available.
Three studies inquiring into the relationship between various personality traits and characteristics of "good" vs. "poor" teachers reveal findings worth noting. Dixson and Morse (1961) administered teacher rating questionnaires to over 2,000 pupils of 97 student teachers. When the student ratings were compared to the student-teachers' self-reports on instruments selected to measure their "empathic potential" the authors found verification of their hypothesis that individuals who have high empathic capacity as measured by pupil responses are also seen as better teachers.

Heil and Washburne (1961) reported that 6 years of elementary school research showed that different "types" of teachers had significantly different effects on the progress of different "types" of children. Overall, this pair found that of three teacher types, "turbulent," "self-controlled," and "fearful," the "self-controlled" type was markedly the most effective. However, the authors reported that a more detailed analysis of the findings suggests that on measures of pupil progress, this generalization does not hold. The authors expressed some concern about their methods but admit that the data suggest "the effectiveness of the teacher is more closely a function of her personality pattern than of her professional knowledge or any other characteristics of which we have pertinent cognizance" (p. 405). While the authors' "types" are not particularly helpful for the purposes of this review, their conclusions affirm one of Rogers's (1969) contentions about the irrelevance of mechanical concerns in teaching.
A third investigation into the psychological complexions of the competent teacher was conducted by Bowers and Soar (1962). They relied heavily on data supplied by teachers through their responses on the Minnesota Multiphasic Personality Inventory (Hathaway & McKinley, 1967). They found that four subscales of that inventory correlated .62 (in linear regression) with the criterion measures. They reported that their results enabled them to construct a coherent picture of personality resources basic to skillful interpersonal relationships. According to them, "A teacher must, in short, care; must not have this concern blocked by her own intrapersonal tensions; and must be relatively free of distorting mechanisms, and able to enter honestly into relations with others" (p. 311).

In concert, these studies point out that personality characteristics of "good" teachers are not unlike the characteristics Rogers would assign the skillful facilitator of learning. Empathic potential (Dixson & Morse, 1961), caring, and ability to enter honestly into relations with others (Bowers & Soar, 1962) easily translate to empathy, positive regard, and genuineness in the Rogerian paradigm.

The thrust of the research reviewed thus far indicates that teachers who develop warm, understanding, and honest relationships with students (as seen through the eyes of the students, the self-reports of the teachers, and the judgments of trained observers) tend to facilitate the noncognitive growths of their elementary and secondary students—although to a lesser degree with secondary students. At this point, the evidence is still speculative with respect to cognitive gains; although secondary studies seem to indicate a modest
negative correlation, a modest positive correlation, or a zero correlation between the quality of the teacher-student relationship and this outcome.

Current Works

Rogers's (1959) postulation, that teacher-offered empathy, positive regard, and genuineness are the three constituent ingredients of the facilitative interpersonal relationship, marks a turning point in this avenue of educational research. Where independent variables once took on names like "empathic potential," "teacher warmth," "interpersonal functioning," etc., the terms "facilitative functioning" or "facilitative conditions" have become the prevalent descriptive variables. The "facilitative conditions" have become the summative label for facilitator-offered levels of empathy, positive regard, and genuineness. In essence, these postulations provide a theoretical phylum by which this early research can be connected with the research that follows. What can appear today as a cohesive body of findings is given that cohesion by Rogers's postulations.

Roebuck (1975) credited Truax and Carkhuff (1967) and Carkhuff and Berenson (1967) with devising and validating instruments and procedures to measure levels of interpersonal conditions within a broad range of interpersonal relationships. It was this "technology" of measurement that enabled Aspy and Roebuck (1974) to pursue their myriad of researches in this area. Rogers credits Aspy and his chief research partner, Roebuck, with being primarily responsible for forwarding the validating evidence of the Rogerian hypotheses (Aspy &
Roebuck, 1974).

One of the most often-cited references in the current literature is Aspy's (1965) doctoral dissertation. In that research, Aspy tape recorded the reading sessions of six third-grade teachers during 1 week in March and 1 week in May of the same academic year. Aspy's sample of students included the five boys with the highest IQ's, the five boys with the lowest IQ's, the five girls with the highest IQ's, and the five girls with the lowest IQ's; 20 students from each teacher's class. The students were administered five subtests of the Stanford Achievement Test during September and again in May of the same academic year. The differences between the subjects' scores were used as the measure of the students' academic gain.

The audio tapes of the teachers' interactions with their reading groups were evaluated by three trained raters who used Carkhuff's scales (Carkhuff & Truax, 1967) to assess levels of empathy, positive regard, and genuineness. When the ratings for the six teachers were in, it was discovered that the rank order was the same for each teacher for each of the three variables assessed. The composite variable "facilitative functioning," therefore supplanted discussion of three separate variables.

Aspy (1965) found that the levels of empathy, positive regard, and genuineness provided by teachers related positively to the cognitive growth of their students. This relationship was found on four subtests of the Stanford Achievement and the total gain. However, for the spelling subtest, these facilitative conditions were related negatively, though insignificantly, at the .05 level of confidence.
Aspy has been quite candid about some of the weaknesses of this research. Mainly, he mentioned that it is entirely possible that the teachers who provided the highest levels of facilitative functioning may have been, in other ways, the best teachers. He did not control for other variables that may have indicated if this was, in fact, the case.

Nor could Aspy speak definitively about which came first, the facilitative functioning of the teacher, or the achievement oriented behaviors of the study's students. He proposed that achievement oriented students may be more pleasant to teach. Taped recordings of reading sessions would pick up the positive regard the teachers of these achievement oriented learners felt for them. When compared to achievement scores, one would find a high correlation between achievement scores and rater assessments of teacher's facilitative functioning.

There is another difficulty with Aspy's research. If the N of 120 (the number of students participating in the study) is used to assess the potency of the F-values arrived at in this study, then the F-values are significant at the levels reported by Aspy. If, however, an n of 6 (the number of teachers who participated in the study) is used to evaluate the significance of the F-values obtained, only one subtest, the language subtest, of the Stanford Achievement Test could be said to be significantly related to teacher-offered empathy, positive regard, and genuineness at the .05 level of confidence. A case could be made for either method of analysis, but conservative analysts would opt for the second method (Christensen, 1958; Cogan,
As Aspy (1974) reflected on his original study (Aspy, 1965), he noted that "while the original study was not definitive, it was sufficiently provocative for it to be replicated and extended" (p. 165). In cooperation with Hadlock (Aspy & Hadlock, 1967), Aspy explored the relationship between teachers' levels of facilitative functioning and two dependent outcomes—student achievement and absenteeism. In a design virtually identical to that just reported, Aspy and Hadlock found a significant positive correlation between teachers' facilitative functioning and students' cognitive growth, and a significant, inverse correlation between the independent variables and absenteeism for elementary-aged students.

After Aspy's collaboration with Hadlock, his investigations took a different direction (Aspy, 1974). Not until 1972 did he return to the investigation of the relationship between the effects of the level of teacher-offered empathy, genuineness, and positive regard and student outcomes in education. In a study with Roebuck (Aspy & Roebuck, 1972), Aspy investigated the relationship between teachers' levels of interpersonal functioning (facilitative functioning) and levels of cognitive functioning obtained by students' of those teachers.

Forty female elementary teachers participated in the study. In the classrooms of 20 of the teachers, students remained at the memorization level (Level 1) of Bloom's (1956) taxonomy during the entire hour of a taped class. In the other 20 classrooms, analysis of the tapes revealed that students moved beyond the memorization and recall...
level and attained one of Levels 2-6. The authors hypothesized that in those classrooms where students were functioning beyond Level 1, teachers would be offering higher levels of empathy, genuineness, and positive regard.

The researchers' findings did not support the research hypotheses totally. Only teacher-offered levels of positive regard were significantly and positively related to cognitive levels of functioning achieved in the classroom. The authors cautioned that their sampling of 1/1000th of a teacher's in-school effort may not be sufficiently large enough to enable one to draw generalizations that can be viewed other than cautiously. They suggested that this methodology might prove useful in future studies of "process" outcomes of education.

In a study conducted in Florida involving 50 fifth-grade teachers from six counties, and 782 of their students, Roebuck (1975) set out to utilize outcome indices in both academic and social-emotional areas to determine the effects of teacher-offered empathy, genuineness, and positive regard on these outcomes. Students were pretested. Classrooms were visited six times each during the next 7 months. Tape recordings of segments of these visits were analyzed to assess levels of regard, empathy, and genuineness. Posttests were administered.

Roebuck reported that the results of 16 multiple regression analyses (utilizing teacher interpersonal skill scores, student IQ, and pretest standing as independent variables with student raw change as the dependent variable) proved significant beyond the .001 level.
of confidence, and yielded multiple correlation values ranging from .21 to .42. She used this evidence to support her conclusion that this study "again demonstrates the importance of the teacher's interpersonal facilitative skills as a predictor of student outcomes in all measured dimensions of personal, academic, and social growth" (p. 14).

In this report Roebuck does not specify how much "teacher interpersonal functioning" contributed to the coefficient of determination in these multiple regression analyses. It is conceivable that this variable added little to the multiple correlations reported. Having reported this detail would have allayed the suspicions of the critical unbeliever.

In 1977, Aspy and Roebuck reported on the culmination of more than 10 years of research on the affects of interpersonal functioning on outcomes of the educational process. Within that span of research they reported involving over 500 teachers and administrators and 10,000 students in both urban and rural settings. In this report, they summarized the results of early studies in the field—which demonstrated that levels of teacher-offered empathy, positive regard, and genuineness related positively and significantly to student attendance (Aspy & Hadlock, 1967), IQ gains, cognitive growth (Aspy, 1965), and levels of cognitive functioning (Aspy & Roebuck, 1972).

Taken in concert, the evidence presented in these early studies was persuasive enough to enable an organization of persons, with the leadership of Aspy and Roebuck, to form the National Consortium for Humanizing Education (NCHE). This organization conducted teacher-
training, trainer-training, and principal-training, and collected data on the impact of these trainings on the trainees and the students they served. While not all the studies conducted by NCHE are directly related to the subject of this study—the facilitative functioning of teachers and desirable outcomes of the educational process—the findings of their research on this topic is especially relevant to this investigation.

The technology for conducting these investigations was similar to that used in the previous studies of Aspy (1965), Aspy and Roebuck (1972), and Roebuck (1972). Tape recordings of teacher-instruction were made. The recordings were evaluated by trained raters to assess levels of facilitative functioning—empathy, genuineness, and positive regard. These levels served as independent variables of the research. In this research, over 500 teachers and administrators were involved. They were the educational agents of over 10,000 participating students. Dependent measures included student achievement, student attendance, and student self-concept. The authors reported that they used a pre- and posttesting procedure for data collection; and used an analysis of covariance, with IQ and pretest scores used as covariates, to determine the statistical significance of the relationships between the independent and dependent measures. As before, "the findings supported the position that the teachers' facilitative [functioning was] positively and significantly related to student achievement" (Aspy & Roebuck, 1977, p. 40). Interestingly, the relationship found in this research between achievement and teacher facilitative functioning was stronger at the elementary level than at the
secondary level. This is consistent with studies reviewed earlier (Brookover, 1955; Reed, 1961b; Ryans, 1961) and with the study conducted by Lewis et al. (1965) that will be reviewed later in this chapter.

Moreover, the facilitative functioning of teachers was found to be positively and significantly related to student attendance. This outcome is consistent with the study conducted by Aspy and Hadlock (1967), and led the authors to wonder if "school phobia" isn't somehow related to the interpersonal functioning of teachers. With respect to self-concept, students responding to the "How I See Myself" Test reported more positive self-assessments in the company of higher functioning teachers than did their counterparts in the company of lower functioning teachers. The authors concluded, "in general, students' concepts of their own worth and capability seem to be enhanced by the facilitative conditions provided by their teachers" (Aspy & Roebuck, 1977, p. 42).

In this work Aspy and Roebuck reported on studies beyond the scope of this review. It is enough to say that in their continued investigations on the affects of facilitative functioning on educational outcomes, "replicable, predictable, and significant relationships were detected among variables of teacher and student classroom functioning, . . . [and that] these relationships were different at the secondary and elementary levels" (p. 215). Furthermore, it was discovered that in leadership and training capacities the facilitative functioning of the leader is a significant variable in the outcomes of teacher training.

Emmerling was apparently trying to avoid the "product" variables of education—namely academic achievement—as outcome measures. The outcome measures of his research were teacher attitudes. He dichotomized teachers into an "open"—"positively oriented"—group and a "closed"—"negatively oriented"—group. Teachers responding that they regarded "helping children think for themselves," "getting students to participate," "learning new ways of helping students develop their maximum potential," and/or "helping students express individual needs and interests" as their most serious problems were placed in the "open" group. Those who felt their most urgent problems were "trying to teach children who don't even have the ability to follow directions," "teaching children who lack a desire to learn," "teaching students who are not able to do the work required for their grade," and/or "getting children to listen" were placed in the "closed" group.

Students of these teachers were given the Barrett-Lennard (1962) Relationship Inventory. Those in the "open" group were perceived by their students as significantly more genuine, positive, and empathic than those in the "closed" group.

Besides the fact that the teacher sample used by Emmerling (1961) may have been a biased sample (he selected 57 teachers attending the 1960 Summer Workshop at Auburn University), Emmerling's methods and
analyses seemed appropriate to his ends. In essence, his study demonstrated that students can accurately perceive the orientations of their teachers—that the teacher whose orientation is toward releasing the student's potential is perceived by the student as being so interested, and is perceived as providing higher levels of empathy, positive regard, and genuineness than those teachers who seem to emphasize more "product oriented" student outcomes.

In a work that made no mention of the Rogerian postulations with respect to learning in education (Rogers, 1959), Lewis et al. (1965) hypothesized that "those students who perceive a relationship with their teacher that is in the direction of the ideal psychotherapeutic relationship . . . will make greater academic gains . . . than those students who perceive a non-therapeutic relationship with their teacher" (p. 397). The authors developed a Teacher-Pupil Relationship Inventory (TPRI) which was a modified version of one used in the field of counseling research. This instrument was administered to 845 ninth-grade students and 644 sixth-grade students. In the ninth grade, students were selected from English classrooms—a required course for all ninth graders in the study. Students were pretested in September and posttested in May on various measures of academic achievement.

The authors of the study separated students into one group perceiving a relationship with their teacher in the direction of the ideal psychotherapeutic relationship, and the other group perceiving a teacher-student relationship unlike that ideal. Groups were checked to see if occupational status of parents differed significantly; they
did not. An analysis of covariance, controlling for the influence of intelligence and pretest scores on posttest outcomes, was used to determine the statistical significance of the relationship between the independent and dependent variables of this research. The authors reported that the research hypotheses were supported for the sixth-grade students, but not for ninth graders.

This was an unusual method of analysis. It must be understood that in this research the authors did not group students by teacher, take the group average as an index of the teacher-student relationship and the group average on achievement test as an index of classroom achievement and analyze the relationship between these two variables. Rather, they grouped students by strength of their response on the TPRI. Probably, students from the same classrooms found themselves on different sides of this grouping. A careful reading of this research reveals that the IQ's of those students who saw the teacher-student relationship more positively were significantly different that the IQ's of those students who saw that relationship less positively beyond the .001 level of confidence.

This finding suggests that students with lower IQ's see teachers as relating to them differently than students with higher IQ's see the same teachers relating to them. This is an important finding! It suggests that teachers, in fact, respond to brighter students more positively than they respond to those with less intelligence. It seems unfair, however, to compare these two groups on intellectual tasks, even if the influence of IQ on the outcomes of those tasks is accounted for in an analysis of covariance. The more revealing
analysis would be on class performance and class perception, where it would be expected that IQ differences would not be so dramatic.

While there are problems deciding if this study actually demonstrates what it claims to have demonstrated, it is significant that, once again, there is a difference observed between the outcomes of elementary and secondary students.

Thirty junior high school teachers from seven schools located in Canada volunteered to participate in a research study conducted by Boak and Conklin (1975) that intended to shed light on the question, "How does the interpersonal functioning of teachers really affect the academic outcomes of junior high school students?" One class taught by each teacher was selected for participation in the study. Measures of interpersonal skills were obtained in two different ways—trained raters evaluated two 3-minute segments from audio-taped classroom interaction, and teachers took a written examination intended to diagnose the levels of response they communicate in typical interactions with junior high school students. Outcome variables were assessed through student performance on standardized achievement tests. Using sophisticated statistical analyses intended to compensate for the lack of randomness in teacher selection and student pre-test performance on the dependent measures the authors found a strong, positive, significant relationship between independent and dependent measures.

In a study conducted in the Camp Lejeune Dependent's School System, Robinson (1976) involved 91 sixth-grade students and their 10 language arts classes to test the hypothesis that student perceptions
of the facilitative functioning of teachers were related to their language arts achievement gains. Study students were given several achievement tests of a standard nature in a pre/post design, with the pretest being administered in the spring of their fifth grade enrollment, and the posttest being administered in the spring of their sixth grade enrollment. In the spring of the sixth grade, students completed a relationship inventory. The author found a statistically significant, positive relationship between the classroom means of achievement indices and the classroom means of students' responses to the relationship inventory used in this research. The author tested the hypothesis that when the individual was used as the unit of analysis there was also a direct relationship between these two variables. This hypothesis could not be supported by his analyses.

As with Aspy's (1965) dissertation, Robinson's (1976) statistics were significant for classroom means if the degree of freedom was selected by choosing an N of 91 (the number of students participating in the study). Had an n of 10 been selected as the determinant of the degrees of freedom associated with the statistical analysis, the relationships reported would have been insignificant at the .05 level of confidence. While there is justification for selecting either N, it is the more conservative approach to choose the latter method.

Three studies that utilized the facilitative functioning of helpers—tutors, parents, preschool instructors—as independent variables and pupil change indices as dependent variables were selected for inclusion in this review. In a study extending the hypothesis that facilitative functioning of preschool teachers would be
positively related to the students' constructive personality change, Truax and Tatum (1966) found evidence to support that hypothesis. Design decisions make it difficult to determine which came first, however, the constructive behavior of students, or the positive teacher-student relationship.

When Stoffer (1968, 1970) assessed the changes in intelligence, achievement, classroom misbehavior, and motivation of 35 elementary school children experiencing academic and behavioral problems made when "helped" by 35 female adult volunteer workers who evidenced differing levels of empathy, positive regard, and genuineness, he discovered several things. (a) The child's perception of the helper-student relationship was more predictive of outcomes than other measures utilized in the study. (b) Only modest correlations between relationship variables and dependent measures were found. Achievement measures and indices of classroom misbehavior were the only two dependent measures significantly associated with the independent variables.

Kratochvil, Carkhuff, and Berenson (1969) discovered that the cumulative effects of parent and teacher facilitative functioning were not significantly related to indices of student physical, emotional-interpersonal, and intellectual functioning for 80 fifth-grade students. This meant that students' teachers for the past 6 years were assessed to determine the levels of facilitative conditions they offered. Likewise, parents were assessed. On all growth indices the cumulative effects were insignificant. Methodological problems, however, reassure the researchers that even though the
relationship between the independent and dependent variables was obscured in this effort, the relationship exists, given the right mix of student, teacher, and parent characteristics.

The literature surrounding the teacher-student relationship is rich with research findings of a "suggestive" nature. For example, in two independent, but similar research efforts, Combs and Soper (1963) and Tyler (1964) explored the concept of the "ideal" teacher-student relationship. Combs and Soper discovered, to their surprise, that both "good" and "poor" teachers showed high agreement with expert therapists on what the ideal teacher-student relationship "ought" to be. Similarly, Tyler found that there was significant agreement among teachers from varying training backgrounds as to the nature of the ideal teacher-student relationship. The characteristics of the desirable relationship were found to be similar to the ideal therapeutic relationship. Both these findings suggest there is some universal notion of what the facilitative teacher-student relationship looks like; that that ideal relationship is similar to the ideal therapeutic relationship; and that the postulations of Rogers are reasonably descriptive of both these ideals.

As they expanded their investigations, Aspy and Roebuck discovered that much of the teacher behavior that was diagnosed by the use of Carkhuff's scales was highly intercorrelated with the behaviors Flanders labeled as indirect influence (responding to feeling, praising, using students ideas, and asking questions), and other indices of teacher interpersonal functioning and classroom behavior (Aspy, 1974). In other research conducted with Hutson (Aspy & Hutson,
1972), a scale for measuring teacher's promotion of student success was found to be highly intercorrelated with both Flanders' Categories of Interaction and Carkhuff's scales. These findings suggest that there is a realm of teacher behavior that is relationship oriented, is described by other descriptors, and is highly intercorrelated with all indices of these variables as they are described. As Aspy (1974) pointed out, "the list of combinations and permutations with these [variables] could be endless" (p. 167). Therefore, the relationship variables described by Rogers have been intimated and approached by others, and have been found to be similarly related to indices of student growth.

Studies of the effects of human relations training on the achievement of students (Berenson, 1971; Hefele, 1971) offers related support for the hypotheses that positive teacher-student relationships positively effect the outcomes of education in significant ways.

Other researchers' work flirts with findings supportive, although not directly related, to the hypotheses of this study. Willis's (1961) finding that alumni who responded to her questionnaire described the teachers who most influenced their education were perceived by these respondents as demonstrating characteristics of facilitative functioning; while Benedict (1980, 1981), Close (1971), Cronbach (1963), Easterday and Paul (1980), Garrison, Kingston, and McDonald (1964), Hamachek (1969), Heil and Washburne (1961), Lembo (1969), Ludwig and Maehr (1967), Martin (1979), Melton (1965), Moon (1966), Morgan (1960), Moustakas (1966), Purkey (1970), Stabler (1975), Tatum (1964), and Thelen (1961) all support the general
themes of this research with their findings, musing, or both.

Summary

Overall, the literature clearly states that there are differences between the outcomes associated with the facilitative functioning of teachers in secondary and elementary schools (Aspy & Roebuck, 1974).

In elementary schools the independent variables of this research have been shown to be positively and significantly associated with cognitive growth, levels of cognitive functioning, self-concept gains, and student attendance. In secondary schools, where relationships between these variables have been studied, the results have been equivocal at best.

Still, the research in secondary schools has been minimal (Aspy & Roebuck, 1977; Brookover, 1955; Lewis et al., 1965; Reed, 1961; Ryans, 1961). In only one instance were self-concept measures related to the independent measures of this research (Aspy & Roebuck, 1977). Furthermore, academic achievement has gotten mixed reviews. There is no published record that levels of cognitive functioning have been related to teacher facilitative functioning in the secondary schools.

There appears to be room for more investigation into the effect of teachers' facilitative functioning on these several indices of educational outcomes—achievement, self-concept, levels of cognitive functioning, and attendance—across academic disciplines in secondary schools. This research attempts to satisfy this need.
CHAPTER III

RESEARCH METHODOLOGY

Methodological Considerations

In this chapter, the research methods entertained in this dissertation are discussed in detail. This is ex post facto research, which is particularly useful for investigating the relationships between variables as they occur in their natural settings (Kerlinger, 1973). This research design was carefully constructed to insure that: (a) to the greatest extent possible, students taking the classes being studied in this research were not placed in the classes—but were more nearly "randomly" assigned to the sections they enrolled in; (b) the independent variable of this research was accurately isolated and measured; (c) alternative explanations for the findings of this research were accounted for. By these design safeguards, this study has protected against the potential weaknesses of ex post facto research (Kerlinger, 1973). Therefore, one can be relatively confident that the interpretations of the data generated by this research have been appropriately entertained.

Random Assignments to Classes

In most public secondary schools students choose those classes which they take. This reality can seriously affect the assumptions one must make about students being randomly assigned to different
classrooms if one is to assume that the observed differences between classrooms is due, primarily, to the effect of teacher facilitative functioning. There is one set of courses, however, which minimizes the effects of self-selection--those courses which students are required to complete successfully before they can graduate from high school. If it can be established that placement in a particular section of a required course is not dependent on student propensity for academic achievement or any other special selection criterion, then it may be assumed that in this section students from all socioeconomic backgrounds, across the normal range of propensities for academic achievement, of both sexes have an equal opportunity to be enrolled. Great care was taken to select classes which met these criteria. By this selection process the effects of self-selection on the outcomes of this study have been minimized.

Controlling for Contaminants

In this research, data were gathered from a nearly countywide population of students--1,600 students from 68 sections of required courses being taught by 26 teachers in four separate school districts in Kalamazoo County. By the size of this sample it was hoped that those variables which might contaminate the findings of this research would be more or less randomly distributed throughout both the classrooms of the more facilitative and less facilitative teachers. This type of distribution would diminish the effect of these contaminants on the outcome variables under investigation.
In order to determine if this assumption was accurate, data were collected to determine if extraneous variables were related significantly to the dependent variables of this research. Specifically, with respect to teachers: sex, age, years of service, teacher training, in-service training, and fields of specialization data were collected. With respect to students: sex and grade level data, as well as information about student propensity for academic achievement, were collected. Care was taken to sample across times of day, from all required academic disciplines. It did not appear that holidays, historical accidents, or other interfering variables affected the study's subjects. Of the potential contaminants named above, only student grade level and propensity for academic achievement were significantly related to at least one of the dependent measures. The effects of their covariance with these outcomes is discussed in Chapter IV of this dissertation.

Variable Measurement

The Teacher-Student Relationship

Barrett-Lennard (1962) developed a client completable relationship inventory—the Barrett-Lennard Relationship Inventory (BLRI)—which was to discern the client's perceptions of the therapist's genuineness, regard for the client, and empathy with the client in the therapeutic setting. In her work, Barrett-Lennard reported split-half reliability coefficients of .93, .86, .89, and .82 for the level of regard, empathy, genuineness, and unconditionality subscales.
of this instrument, respectively. In this sample, split-half reliability coefficients were calculated to be .93, .88, .89, and .77 for these same scales.

For purposes of this research the relationship inventory was modestly modified to fit more appropriately in the educational setting and to avoid sexual stereotyping. This editing was accomplished by replacing the word "he" with the words "this teacher" and the word "his" with the words "this teacher's" wherever they occurred in the original inventory. In all other ways, the instrument is identical to the current form of the inventory (Wagenfeld, 1976).

The instrument has 64 items: 16 relating to level of regard, 16 to unconditionality, 16 to empathic understanding, and 16 to genuineness. "This teacher respects me"; "this teacher wants to understand how I see things"; "this teacher approves of some things I do, and plainly disapproves of others"; and "I feel that this teacher is real and genuine with me" are four of the statements that students respond to that get at their perceptions of their teacher's level of regard, empathic understanding, unconditionality of regard, and genuineness, respectively. Students may either agree strongly, agree, mildly agree, mildly disagree, disagree, or disagree strongly with each statement.

An item and factor analysis of these students' responses to this inventory was undertaken to determine if students participating in this research were responding to the items on this inventory in ways consistent with design expectations. As was the case with Aspy's (1965) results, the regard, empathy, and genuineness subscales of
This inventory can be discussed as a single variable—in this case "teacher facilitative functioning." For these three subscales, the average intercorrelation was .80. On the other hand, the average correlation of the unconditionality subscale with the other inventory scales was .20. For this reason the unconditionality scale was not utilized as a constituent of teacher facilitative functioning. Inasmuch as Barrett-Lennard (1962) intended the unconditionality scale to be a modifier of the regard scale, its exclusion as a constituent of teacher facilitative functioning is consistent with the design of the instrument.

The preponderance of research in this field has used trained raters to evaluate tape recordings of classroom instruction to assess levels of teacher facilitative functioning (Aspy & Roebuck, 1977). For many reasons it was more desirable and practical to collect relationship data by obtaining student perceptions of teacher facilitative functioning through the use of the BLRI than to use the more prevalent methodology of taping classroom interaction and using trained raters to evaluate these tape recordings. Roebuck (1980) expressed her belief that by taping and evaluating the tapes of some special classrooms, the validity of the paper and pencil measures might be more firmly established. Toward this end it was decided to tape record three randomly selected 20-minute segments of instruction in the classrooms of the five teachers who received the highest mean scores on the BLRI and the five teachers who received the lowest mean scores on the BLRI.
As it occurred in this study, most of the classrooms that received the lowest scores were not willing to be taped. From a list of teachers who volunteered for taping, 10 were chosen who were most representative of the extremes of this sample—four of the five highest, two of the five lowest, and four from the midrange. To complicate things further, these teachers insisted that they choose the times taping was to be completed. Further, two 30-minute segments constituted an hour's taping where it was planned that three 20-minute segments would comprise that hour. As a consequence of these adjustments, the results of the tapings were predictably uninterpretable. The correlations between student and rater perceptions was very nearly zero for all variables measured. This need not suggest that either student or rater assessments of teacher facilitative functioning is invalid. Rather, it emphasizes how important research cooperation and satisfaction of the condition of randomness are to achieving interpretable results.

While this comparison of raters' perceptions and students' perceptions did not establish the validity of the BLRI neither did it establish its invalidity (under the circumstances). Other findings suggest that the BLRI performed admirably in its role as an index of student perceptions of teacher facilitative functioning. This instrument was administered twice during the course of the second semester of the 1980-81 school year—once during the first 5 days of that semester and once during the next to the last week of that semester. An item and factor analysis conducted after each administration yielded virtually identical results for samples as large as 1,400. Items
correlated well with the scales they were intended to correlate highly with, and one, overall "teacher facilitative functioning" factor was found to exist—this is consistent with the theoretical postulations of Rogers (1969) and the design of the instrument (Barrett-Lennard, 1962). Moreover, the inter-section reliability coefficient (computed by correlating the classroom means of separate sections taught by the same teachers—but reported by the different populations of students who comprised each section) averaged .90 across all sections and across time. This evidence supports the contention that the BLRI is a reliable measure of student perceptions of teacher facilitative functioning. The data generated by this instrument is treated as interval data.

**The Self-Concept**

For purposes of this research *self-concept* refers to the perception one has of the person one is in relation to others or in different existential contexts. For example, one's perception of the person one is may be different in relation to a parent than it is in relation to a best friend, or worst enemy. Moreover, one's perception of the person that one is may be different in the context of enjoying one's favorite hobby than it is in the context of suffering through a required, but unpleasant, activity.

Osgood's (1957) Semantic Differential (SD) technique was employed to measure students' self-concepts in six different contexts—"Me as I am," "Me as I wish I were," "Me as I am in this class," "Me as I am in this school," "Me as I am to those who like me," and "Me
as I am to those who dislike me." As was expected, students' self-evaluations were different in the different contexts.

In accordance with the warnings of Wylie (1974a) great care was taken to select scales for inclusion on the SD that were "maximally useful in measuring self-concept" (p. 227). Before this study was undertaken a 22-scale SD was developed which contained "adjective pairs (selected) for their apparent self-concept dimensions" (p. 229) as Wylie suggested. This instrument was administered to students from two classrooms selected because they contained a heterogeneous cross section of students, and their teachers were known to be different in several noteworthy ways (Benedict, 1980, 1981). Of the initial 22 scales, 10 were selected for use in this dissertation—smart-dumb, able-unable, happy-sad, successful-unsuccessful, good-bad, valuable-worthless, strong-weak, relaxed-tense, alive-dead, and active-passive. Students indicated that either the positive adjective described them "very" well (scored as a 6), "quite" well (5), or only "a little" (4); or that the negative adjective described them "a little" (3), "quite" well (2), or "very" well (1). Half of the scales were stated so that the positive word appeared first, and half the scales were presented with the negative word occurring first.

While it is common practice to interpret SD results as if subjects were responding to three dominant factors—evaluation, potency, and activity—a factor analysis of the responses of over 1,400 students to six forms of the same instrument (where one form—"me as I am in this class"—was administered twice during the course of the second semester of the 1980-81 school year) suggests that a single
factor—named "total self"—accounts for the preponderance of the variance of responses to the 10 items. The 10 scales correlate highly with this most dominant factor—smart-dumb (.68), good-bad (.60), active-passive (.57), able-unable (.60), happy-sad (.68), alive-dead (.69), strong-weak (.66), valuable-worthless (.72), relaxed-tense (.53), and successful-unsuccessful (.75). In accordance with Wylie's suggestions about the appropriate analysis of SD's and the data generated by these item and factor analyses, a single score, arrived at by aggregating the student's responses to the 10 items of an SD, yields a picture of the student's self-concept in the context identified on the SD form.

In order to establish further the validity of the SD constructed for this research a group of 50 educators from one high school was asked to fill out the instrument as they wished their students would see themselves. There was nearly unanimous agreement that it is desirable that students see themselves as "smart," "good," "active," "able," "happy," "alive," "strong," "valuable," "relaxed," and "successful." This evidence, as well as the evidence gleaned from reliability measures (split-half .74), suggests that the SD's designed for this research performed well in their role as measures of student self-concept in different contexts. It is the context "me as I am in this class" that is of central importance in this research. The context "me as I am," and "me as I am in school" will be used as covariates in the analyses of covariance that will be discussed in Chapter IV. The data generated by the students' responses to this instrument will be treated as interval data.
Levels of Cognitive Functioning

Levels of cognitive functioning were assessed through the use of a modified version of the Class Activities Questionnaire (Steele, 1975). The Class Activities Questionnaire (CAQ) is a 25-item instrument. It asks students to agree or disagree on a 4-point scale with statements describing general kinds of activities which characterize their class. The activities imply either levels of thinking or affective classroom conditions.

This instrument was used in this study to assess levels of cognitive functioning. Only those 14 items which relate to this dimension of class activity were selected for use in this modified version of the CAQ. Two items relate to each of the seven cognitive processes taxonomized by Bloom et al. (1956)—memory, translation, interpretation, application, analysis, synthesis, and evaluation. The subscores for these seven processes are clustered to form two dimensions entitled "lower thought processes"—comprised of memory, translation, and interpretation subscores—and "higher thought processes"—comprised of application, analysis, synthesis, and evaluation subscores. Steele (1971) reported that this dichotomy is "strongly supported in validation studies of Bloom's Taxonomy" (p. 450). For the seven subscales—memory, translation, interpretation, application, analysis, synthesis, and evaluation—and the dichotomous variables—lower thought processes and higher thought processes—Steele (1971) reported split-half reliabilities of .88, .65, .86, .83, .78, .89, .71, .76, and .85, respectively. A factorial validation of the CAQ...
reported by Wahlstrom (1971) found reliability quotients smaller than those reported by Steele (1971). Wahlstrom concluded, however, that "the CAQ appears to be sufficiently reliable and valid to be used for experimental purposes" (p. 23).

In an effort to substantiate further the reliability of the CAQ, reliability coefficients were derived from the students' responses to this instrument in this study. For the seven subscales—memory, translation, interpretation, application, analysis, synthesis, and evaluation—split-half reliability coefficients of .24, .17, .29, .30, .38, .34, .23, and .28, respectively, were calculated on this sample of over 1,000 responses. These data suggest that it would be inappropriate to use the students' responses to this instrument as a means of focusing on discrete levels of cognitive functioning.

This instrument is, however, a relatively reliable vehicle to use to focus on the two broader levels of cognitive thought processes—higher and lower. The aggregate variable lower level thought processes correlates highly—.65, .66, and .67—with its constituents—memorization, translation, and interpretation. At the same time, this variable correlates poorly with the constituents of the aggregate variable higher level thought processes—application (.17), analysis (.28), synthesis (.23), and evaluation (.27). Likewise, the aggregate variable higher level thought processes correlates highly with its constituents—application (.75), analysis (.74), synthesis (.73), and evaluation (.66)—while it correlates poorly with the constituents of lower level thought processes—memorization (.02), translation (.34), and interpretation (.32). Split-half
reliabilities for lower level and higher level cognitive functioning are, respectively, .67 and .73. Since both lower and higher thought processes occur to some lesser or greater degree in all classrooms, both were examined in relation to teacher facilitative functioning. The data generated by the use of this instrument are treated as interval data.

**Academic Achievement**

Academic achievement is simultaneously an easy and difficult outcome to measure. It is easy because a single query of the teacher will yield a response (a grade) that is reasonably descriptive of the learner's class performance and is generally accepted by the student, his or her peers, his or her parents, the community, the board of education, and any other party authorized to see that response. It is difficult to measure because critical thinkers note that there are many factors which may influence teacher estimates of student achievement other than actual learning achieved. If academic achievement is to be rigorously determined, it must be known what is to be taught and how much of what is to be taught is already known by the learner before instruction begins. When instruction ends, another measure (of how much of what was taught is now known by the learner) must be taken. The gain scores—what is known after instruction minus what was known before instruction—constitute achievement.

Even if some objective referenced assessment in a pre-posttest design is accomplished, questions like "How does the learner's gain in this classroom compare to a learner's gain in the classroom of
a teacher teaching different objectives?" remain unanswered. After all, does mastery of an item on a test in classroom A equate to mastery of an item on a test in classroom B? Is the mental output the same? Do the same number of students (on average) get the same number of items correct on the objective referenced test in classrooms A and B, even though the content of those tests may be quite different? These are important questions. It was through attempting to answer them that the design for measuring achievement gains (in the five classrooms with the highest mean scores on the BLRI and the five classrooms with the lowest mean scores on the BLRI) was developed.

As it was planned, teachers whose students reported that they were the five most facilitative teachers in the sample and the teachers whose students reported that they were the five least facilitative in the sample were supposed to take part in a rigorous assessment of classroom achievement. These teachers were to have been identified after the initial administration of the BLRI was scored—a process it was optimistically hoped would be completed by the end of the second week of instruction. After these teachers were identified, they were to have selected, from a choice set of standardized achievement tests published to assess achievement in their subject area, the one best achievement test—that asked questions most like the questions the teacher might ask on a final examination. The advantage of using standardized achievement tests (as opposed to teacher-constructed finals) is that norms are available on standardized tests (whereas they aren't on teacher-constructed tests).
It was expected that once this one best test was identified (now at the end of the second week of the semester) students could immediately be pretested. A posttesting at term's end in these 10 classrooms was to have yielded gain scores that could have been readily compared (as percentile changes, or normal curve equivalency score changes).

This part of the study was not conducted as it was planned. The initial BLRI was not scored until the middle of the third week of the semester. At this point those teachers identified as least facilitative by their students were expressing reluctance to be further involved in the study. Those who were willing to participate further were looking askance at the assignment of evaluating standardized achievement tests under such demanding time constraints. Many expressed disbelief in the appropriateness of any of the tests for the task of assessing achievements in their class(es).

Had all 10 of the teachers expected to be involved in this phase of the study selected a best test within the 2 days allowed for their inspection, and had these tests been immediately ordered in the quantities sufficient to test classroom members, test suppliers were warning that delivery of tests could take from 2 to 6 weeks. It was apparent that even if the plan came off in the sequence it was designed to follow, meaningful pretesting was a mechanical impossibility— it would have been the sixth or eighth week of school before pretesting could have occurred.

It was the reluctance of the five least facilitative teachers to participate in this phase of the research which was its coup de grace.
Using volunteer teachers to complete this phase of the research would have compromised the design of this study. The volunteer teachers were all tending to be the more facilitative (in the students' eyes) which meant that if achievement data were gleaned from their students, variances in the degree of teacher facilitation between classrooms may have been so small that meaningful analyses of these data would have been prevented. It was decided that an alternative method of collecting achievement data should be explored, and this plan abandoned.

As it occurred, two of the four school districts participating in this research also participated in a standardized testing program. Twenty-two classrooms which were participating in this study were included in these testing programs. (For an identification of those sections taking part in this phase of the study, please see the participant identification table in Appendix C.) The tests given in these classrooms were deemed by their respective school boards to be reasonably accurate indices of the students' academic gains in the disciplines being taught in these classrooms. While pretesting was not part of their design, they assumed, as one must, that random assignment of students to the classrooms of different teachers would prevent posttest scores (on average) from being artificially depressed or elevated (as a result of chance overloading of different classrooms with either high ability or low ability students). At this point in time this alternative seemed more desirable than doing nothing; particularly because the schools' highest officials were suggesting that these tests were used in their districts to assess students' cognitive
growth in the academic disciplines under investigation in this re-
search. Upon closer examination of the nature of the tests and the
nature of the coursework being examined by them, it was determined
that these tests were not testing students on the content of the cur-
ricula being taught in these classrooms. For this reason, it was
determined that analyses based on student performances of these tests
would be inappropriate. This is discussed further in Chapter IV.

Whether or not the achievements of students in classes that did
not participate in standard achievement testing can be comfortably
discussed depends on the faith one places on teacher estimates of stu-
dent performance and ability. All teachers involved in this study
were asked to assign three numbers to each student in their class(es).
Using a 5-point Likert scale they reported that the "quantity" of the
student's work, the "quality" of the student's work, and the stu-
dent's "propensity for academic achievement" were either (1) way be-
low average, (2) below average but not way below average, (3) average,
(4) above average but not way above average, or (5) way above average.

A manufactured variable, "classroom performance," was calculated
by taking the square root of the product of the student's quality and
quantity scores. This method for deriving the manufactured variable
was chosen over averaging its two constituents because in the former
case the constituent variables correlated more highly (+.95) with the
manufactured variable than they did using the latter method (.89).
This derived variable is used as the variable of analysis and discus-
sion for teacher estimates of student performance.
Teachers' estimates of students' propensity for academic achievement were used as indices of the probability of students' succeeding academically. Teachers were asked to use the 5-point Likert scale reported earlier to complete the sentence "According to my knowledge of this student's previous academic history, I'd say this student typically performs _____ in school as a whole." This measure provides an efficient (though not necessarily valid) method for determining if a student's achievement is atypical—for better or worse. This index is used in several analyses of covariance discussed later in this dissertation.

Inasmuch as students' performance on the standard achievement tests cannot be taken as valid indicators of classroom learning in all the classrooms in which these tests were given, the teacher estimates of classroom performance are the only data available by which the nature of the relationship between teacher facilitative functioning and student's curricular achievements can be ascertained. The limitations of these data are discussed in Chapter IV of this dissertation in the section devoted to student achievement. These data are treated as interval data.

**Attendance**

Collecting attendance data was a fairly straightforward process. At the time when students were given the final relationship inventory (during the last 2 weeks of school), teachers were asked to report the number of times each student missed class during the first 9 weeks of the second semester. All teachers had recorded the number...
of absences for each student for 9-week report cards. Inasmuch as it was necessary to select some uniform length of time within which absences were to be recorded, it seemed reasonable to use the 9-week period bounded by the start of the semester and the end of the first marking period of that semester and save teachers the chore of recounting absences for each of their students. The findings of this research with respect to the relationship between teacher facilitative functioning and student attendance (discussed in detail in Chapter IV) suggest that it may have been more desirable to use some longer span of time within which to keep track of the absences of study participants. This data was not obtained in the classroom of two teachers (who taught seven of the 68 sections involved in the study). The data obtained were treated as interval data.

**Data Analysis**

For the purposes of analyzing the data generated from these instruments, it has been assumed that the samples were independently drawn from normal populations with equal variances. The data generated by the instruments are treated as interval data. Being satisfied that these conditions exist enables the use of the analysis of variance technique for testing the null hypotheses of this research. In this instance, the null hypotheses hold that students who perceive their teachers as more facilitative will perform no better than students who perceive their teachers as less facilitative with respect to the four dependent measures—achievement, self-concept, levels of cognitive functioning, and attendance.
When testing each of the four null hypotheses, the correlation coefficients between the independent and dependent measures will be reported first. The probability that the correlation coefficient obtained could have occurred due to chance variations in sampling from the participating population (when the correlation is actually zero for the larger population) will be ascertained and reported. An analysis of variance will be undertaken to determine if the means (on the dependent measure under consideration) for those classrooms where students report teachers are behaving more facilitatively and the means for those classrooms where students report teachers are behaving less facilitatively are sufficiently different that the null hypotheses may be rejected. Finally, where covariates are known to correlate significantly with both the independent and dependent measure under investigation, an analysis of covariance will be undertaken to ascertain if suppression of the influence of the co-variate(s) affects the adjusted means on the dependent measures for the two comparison groups—more facilitative and less facilitative—in any significant way. This sequence—test of correlational significance, analysis of variance, and analysis of covariance—will be followed for each dependent measure. Where it occurs that the results of the analysis of variance and the analysis of covariance are essentially in accordance with the findings of the test of correlational significance, only the results of the test of correlational significance will be discussed (though it will be mentioned that these further analyses were completed but added nothing new to our understanding of the nature of the relationship between the independent and
dependent measures).

Since these treatment effects have been found to be only modestly related to dependent outcomes in many previous studies (Aspy, 1965; Cogan, 1958; Kratochvil et al., 1969; Reed, 1961a; Stoffer, 1970; Truax & Tatum, 1966), it was decided that an alpha of .05 would be used as the critical value for rejecting the null hypothesis.

The Classroom as the Unit of Analysis

It is noted that some investigators used the individual as the unit of analysis for hypothesis testing (Cogan, 1958; Lewis et al., 1965; Robinson, 1976; Stoffer, 1968). If the classroom were the unit of analysis, then the scores of classroom members would have been summed and averaged over each of the independent and dependent measures. Analyses would have been completed using these mean scores of all the classrooms (n = 68 in this instance), not all the individuals (n = 1,400) participating in the study. While there are justifications for using either the classroom or the individual as the unit of analysis, using the classroom as the unit of analysis must be considered the more conservative approach (Gage, 1978). In this research, the classroom was used as the unit of analysis in the presentations of all findings. Results of analyses using the individual as the unit of analysis are presented in tabular form without discussion in Appendix C for the reader's information.
The Power of the F-Test

An alpha of .05 was used in these analyses for reasons specified earlier. In preliminary testing done in the classrooms of teachers known to be different in several respects (Benedict, 1980, 1981) it was ascertained that the ratio between the squared mean differences (on the dependent measure being used to assess self-concept) and the variance was .11. It was assumed that this ratio was a reasonable estimate of the scores that were to be collected during the larger study. In order to achieve a phi as high as 1.8, yielding a power of .76, it was ascertained that 60 classrooms would need to be involved in the study. As it turned out, 68 classrooms participated in the study, boosting the power of the study to .83.

Ancillary Considerations

Wylie (1974a, 1974b), in her exhaustive and critical review of the self-concept literature, warned that safeguards need to be taken to insure that the responses of those responding frivolously to research instruments can be identified. On the semantic differentials a check for random responses was included. Two scales (good-bad and happy-sad) were included twice on each SD—once with a left-hand desirable response (good-bad) and once with a right-hand desirable response (bad-good). One would expect that thoughtful respondents would answer each scale identically. Over the 8,400 (6 x 1,400) responses to this instrument obtained in this research, the reliability coefficients derived between the reversals of these identical scales
exceeded .80 for both the good-bad bad-good and the happy-sad sad-happy reversals. Those respondents whose responses to these two pairs of scales were sufficiently different to question the validity of their effort (the variance between their responses to identical scales was greater than one unit on both scales) were identified. Their responses were not used in these analyses. Only 56 students out of nearly 1,400 were determined to be responding frivolously to these instruments by this criterion. Furthermore, each of the instruments used in this research is constructed so that on half the questions a positive response (left-handed) is the desirable response while on the other half of the questions a negative response (right-handed) would be the most desirable.

Summary

Over 1,600 students, enrolled in required courses in the high schools of four neighboring school districts, participated in this study. During the first 5 days of the second semester of the 1980-81 school year the students from 68 classrooms which qualified for study completed the Barrett-Lennard Relationship Inventory. With this instrument, students' perceptions of their teachers' facilitative functioning—regard for them, empathy for them, and genuineness—were measured.

On this same visit, students were asked to describe themselves using Osgood's Semantic Differential technique (1957). They described themselves in six different contexts—"Me as I am," "Me as I wish I were," "Me as I am in school," "Me as I am in this class," "Me
as I am to those who like me," and "Me as I am to those who dislike me." The "Me as I am in this class" semantic differential was used to assess student's classroom self-concepts.

Students' classroom achievement was measured by two indices. Teachers used a 5-point Likert scale to report the "quality" and the "quantity" of each student's classwork. Teachers used the same scale to tell of their knowledge of each student's propensity for academic achievement--chiefly determined by their knowledge of the student's previous academic history. A second index of student achievement was their performance on standardized achievement tests in 22 of the 68 classrooms that participated in this research. The students enrolled in these classrooms (n = 314) took tests ordained by their respective school boards to be reasonable indices of their cognitive gains in their respective academic areas. This second index was later determined to be an ineligible index of student achievement. These measures were obtained during the last weeks of the 1980-81 school year.

Levels of cognitive functioning were inferred by students' responses to a modified version of the Class Activities Questionnaire. This instrument listed two statements which were supposed to relate to each of the seven levels of cognitive functioning taxonomized by Bloom et al. (1956). Factor and item analyses suggested that the instrument was interpretable in only the broadest sense—as measures of two general levels of cognitive functioning: "higher" and "lower" level thought processes. This instrument was administered during the 15th week of the second semester, along with a second administration of the "Me as I am in this class" SD, and a second administration of
the Barrett-Lennard Relationship Inventory.

Attendance was measured by asking teachers to report the number of days each student missed class during the first 9 weeks of the second semester of the 1980-81 school year.

A participant identification table, included in Appendix C, identifies the classrooms and the number of participants participating in the various phases of this research. The timetable for data collection is included in this table.
CHAPTER IV

FINDINGS

In this chapter the findings of this research with respect to the relationship between the independent variable—teacher facilitative functioning—and the dependent variables—student self-concept, classroom achievement, levels of cognitive functioning, and attendance—will be discussed. Three tests of each null hypothesis—a test of correlational significance, an analysis of variance, and an analysis of covariance—were undertaken for each of the dependent measures. Where the findings of these three tests were essentially identical, a detailed discussion of the results of each test are not presented.

Self-Concept

One of the central hypotheses of this research holds that students' classroom self-concepts vary directly with students' perceptions of their teacher's facilitative functioning. As has been previously discussed, facilitative functioning has three constituent teacher behaviors—genuineness, empathy, and positive regard. Self-concept refers to one's perception of the person that one is in relation to others or in different existential contexts. In this instance it is the student's self-concept in the presence of the more or less facilitative teacher that is under investigation.

Osgood's (1957) Semantic Differential (SD) technique was employed to measure students' self-concepts. By responding that either
one adjective or the other adjective on each of 10 bipolar adjective scales (good-bad, valuable-worthless, strong-weak, relaxed-tense, alive-dead, active-passive, successful-unsuccessful, smart-dumb, able-unable, and happy-sad) describes them "very" well, "quite" well, or only "a little," students were able to construct a 10-dimensional self-concept portrait of themselves as they saw themselves in each teacher's classroom. These self-concept scores were aggregated and averaged for each of 68 classrooms which participated in this study.

Teacher facilitative functioning was measured by student's responses to the Barrett-Lennard Relationship Inventory (1962). Each student's responses to the items which measured teacher genuineness, empathy, and positive regard were aggregated and averaged to obtain this composite score. This facilitative functioning score was aggregated and averaged for each of the 68 classrooms which participated in this study.

When these classroom self-concept scores and teacher facilitative functioning scores were correlated for this sample of 68 classrooms, a Pearson Product Moment correlation coefficient of .43 was obtained. For this sample this coefficient is significant (alpha = .01), suggesting that there is a direct relationship between teacher facilitative functioning and students' classroom self-concepts.

In order further to understand the nature of the relationship between teacher facilitative functioning and student self-concept, an analysis of variance was undertaken. Two contrasting groups of classrooms were constructed. (The mean of the teacher facilitative functioning scores for all 68 classrooms was determined. Those 33
classrooms where teacher facilitative scores were below this mean were placed in one group. The 35 classrooms where teacher facilitative functioning scores were above this mean were placed in the contrasting group.) For each of these two contrasting groups the mean of the classroom self-concept scores were calculated. The means and standard deviations of these two contrasting groups are displayed in Table 1, along with an analysis of the variance of these means within and between groups. By this analysis of variance it may be concluded that the means of the classroom self-concept scores of these two groups are significantly different from each other. This finding tends to confirm that there is a relationship between teacher facilitative functioning and student self-concept.

Table 1
Differences Between Student Classroom Self-Concept Scores in the Classrooms of More Facilitative and Less Facilitative Teachers

<table>
<thead>
<tr>
<th>Group</th>
<th>Size</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less facilitative</td>
<td>33</td>
<td>4.53</td>
<td>.23</td>
</tr>
<tr>
<td>More facilitative</td>
<td>35</td>
<td>4.74</td>
<td>.15</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean squares</th>
<th>Degrees of freedom</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>.78</td>
<td>1</td>
<td>21.34</td>
<td>.00*</td>
</tr>
<tr>
<td>Within</td>
<td>.04</td>
<td>66</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at or beyond the .05 level of confidence.
Even though the test of correlational significance and the analysis of variance suggest that there is a relationship between teacher facilitative functioning and student self-concept, it is possible that other differences between these two groups of classrooms (those classrooms with more and those with less facilitative teachers) account for the observed relationship between teacher facilitative functioning and student's classroom self-concept. For example, by the works of Aspy and Roebuck (1977), Davidson and Lang (1960), and Lewis et al. (1965) it has been learned that "more capable" students see themselves more positively and report that their teachers see them more positively than do "less capable" students. Perhaps it occurred in this study that the more capable students, on average, ended up in some classes, while the less capable students ended up in other classes. It could be expected, if this were the case, that the more capable students might report that their teachers behave more facilitatively toward them (offering more positive regard, etc.). Conversely, the less capable students might report that their teachers behave less facilitatively toward them (offering less positive regard, etc.). Further, these two different groups of students would be expected to make differing self-concept declarations (Aspy & Roebuck, 1977; Davidson & Lang, 1960; Lewis et al., 1965)—with the more capable students reporting higher classroom self-concepts than the less capable students. If a misallocation of more capable students to one set of classrooms and less capable students to another set of classrooms took place, some computed correlation coefficient or analysis of variance might be spuriously significant. It might be
the case that if self-concept scores could be adjusted to account for
the influence of "capability" on these scores, the resultant differences in the mean self-concept scores for these contrasting groups might be insignificant.

An analysis of covariance enables a test of the hypothesis that the means of the self-concept scores for the two contrasting groups are different, even after these means have been adjusted to account for the covariance of some indices of student capability with those means. In this research three covariates are identified that simultaneously correlate significantly with students' self-concept declarations and can be taken as indices of student "capability"—student responses to the "Me as I am" Semantic Differential, student responses to the "Me as I am in this school" SD, and teacher reports of student's previous academic history.

For the "Me as I am" Semantic Differential and the "Me as I am in this school" Semantic Differential the students responded to the same 10 scales identified earlier. The students were instructed to "describe yourself as you are to yourself in general" when they completed the "Me as I am" SD. Students were instructed to, "describe yourself as you are in school-as-a-whole" when they completed the "Me as I am in this school" SD.

Teachers used a 5-point Likert scale—where 1 = way below average, 2 = below but not way below average, 3 = average, 4 = above but not way above average, and 5 = way above average—to complete the sentence "According to my knowledge of this student's previous academic history, I'd say this student typically performs ___ in school.
as a whole." Teacher responses to this statement constituted a "pro-
pensity for academic achievement" score for each student.

When the means of the classroom self-concept scores of these con-
trasting groups were adjusted to account for the covariance of these
three variables—overall self-concept, school self-concept, and pro-
pensity for academic achievement—with these self-concept scores it
was ascertained that a significant relationship still existed between
teacher facilitative functioning and classroom self-concept. Table 2
displays the results of this analysis of covariance.

The results of these analyses suggest that teacher facilitative
functioning is significantly related to student classroom self-
concept even when the influence of other covariates of student class-
room self-concept are accounted for.

Student Achievement

In this section of this dissertation the relationship between
teacher facilitative functioning and student achievement will be ex-
plored. One of the research hypotheses of this study held that
teacher facilitative functioning and student achievement are directly
related. For purposes of this research student achievement refers
to the gains in knowledge students achieve in the course of learning.
Teacher facilitative functioning refers to the integration of three
teacher behaviors—empathy, genuineness, and positive regard—in the
teacher's classroom behavioral repertoire.

Teacher facilitative functioning was measured by students' re-
sponses to the Barrett-Lennard Relationship Inventory
Table 2
Differences Between the Mean Self-Concept Scores (After Adjusting for Covariate Influence) in the Classrooms of More Facilitative and Less Facilitative Teachers

<table>
<thead>
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<th>Group</th>
<th>Size</th>
<th>Unadjusted mean</th>
<th>Adjusted mean</th>
</tr>
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<tbody>
<tr>
<td>Less facilitative</td>
<td>30</td>
<td>4.52</td>
<td>4.54</td>
</tr>
<tr>
<td>More facilitative</td>
<td>35</td>
<td>4.74</td>
<td>4.73</td>
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Covariate means

<table>
<thead>
<tr>
<th>Group</th>
<th>&quot;Me as I am&quot;</th>
<th>&quot;Me as I am in school&quot;</th>
<th>Historical performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less facilitative</td>
<td>4.77</td>
<td>4.72</td>
<td>3.11</td>
</tr>
<tr>
<td>More facilitative</td>
<td>4.78</td>
<td>4.68</td>
<td>3.48</td>
</tr>
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<table>
<thead>
<tr>
<th>Source</th>
<th>Mean squares</th>
<th>Degrees of freedom</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>.49</td>
<td>1</td>
<td>15.1</td>
<td>.00*</td>
</tr>
<tr>
<td>Error</td>
<td>.04</td>
<td>60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at or beyond the .05 level of significance.
(Barrett-Lennard, 1962). Each student's responses to the items which measured teacher empathy, genuineness, and positive regard were aggregated and averaged to obtain this composite facilitative functioning score. The facilitative functioning scores of the members of classrooms were then aggregated and averaged for each of the 68 classrooms which participated in this study.

There were difficulties collecting indices of student achievement. These difficulties were discussed thoroughly in Chapter III of this dissertation. For pragmatic purposes two indices of academic achievement were obtained. The first, teacher estimates of academic achievement, were collected because the teacher was seen as a potentially reliable source of this data and because obtaining their estimates was a reasonably easy task to accomplish. The second, students' performances on standard achievement tests, were obtained because in the two districts where these tests were given they were employed as if they measured cognitive gains in the classrooms where they were used. Since 314 of this study's participants in 22 of the 68 classrooms that participated in this study took these tests, it was expected that the results of their participation would shed light on the questions under investigation in this research.

Appraisal of the test contents, however, suggests that the use of these tests to measure classroom learning in all these classrooms is inappropriate. For example, in one school district the Social Studies subtest of Science Research Associates' (SRA) "Achievement Series" (SRA, 1979) was taken as an index of classroom learning in such widely divergent courses as 9th grade Michigan History, and
11th grade United States History. Clearly, the content of both of these courses cannot be appraised by the same test items.

It is regrettable that no other concrete indices of student achievement were obtained. Eagerness to have found an easily collectible index of student achievement, when all other plans which were conceived for this purpose seemed impossible to complete, is blamed for believing that these standard achievement test results would prove to be valid indices of students' classroom learning.

Inasmuch as students' performances on these standard achievement tests cannot, therefore, be taken as valid indices of classroom learning in all the classrooms in which the tests were given, it seems inappropriate to entertain analyses of the relationship between teacher facilitative functioning and student performance on these tests. If the contents of the test do not appraise students' understanding of the contents of the course, one would expect that teacher facilitative behavior—or any other teacher behavior for that matter—would have little to do with students' test performance. Suffice it to say that analyses of these data—tests of correlational significance, analyses of variance, and analyses of covariance—indicate that there is no relationship between teacher facilitative behavior and student performance on these standard achievement tests.

In the effort to test the hypothesis that teacher facilitative functioning is directly related to student achievement the only data which remain which might shed light on this inquiry are the teachers' subjective assessments of students' classroom performance. Teachers were asked to report the "quality" and "quantity" of each student's
classwork during the semester of this study. Teachers used a 5-point Likert scale to report that the "quality" and "quantity" of the student's work was either (1) way below average, (2) below but not way below average, (3) average, (4) above but not way above average, or (5) way above average. Responses to this inquiry were obtained in 65 of the 68 classrooms which participated in this study. (For a detailed breakdown of which classes responded to which questionnaires and inquiries, please see Table 10 in Appendix C).

As it occurred in this study, the reported "quality" and "quantity" scores were highly similar, one to the other. By taking the square root of the product of these two scores a single "classroom performance" score was obtained that was highly correlated (.95) with each of its constituents. This single score made data analysis an easier matter. Deriving this single score by taking the square root of the product of its constituents was superior to taking an average of its constituents only because the constituents correlated higher with this derived score obtained by the former method than they did with the derived score obtained by the latter method.

It could be assumed that students who have a history of success with respect to academic achievement would be more likely to be successful in this instance (all else being equal), and vice versa. Using the same 5-point Likert scale described above, teachers were asked to complete this sentence: "According to my knowledge of this student's previous academic history, I'd say this student typically performs _____ in school as a whole." A teacher's response to this statement was taken as an index of a student's "propensity for
The students' "classroom performance" scores were aggregated and averaged in each of the 65 classrooms where this data was reported, as were the "propensity for academic achievement" scores. When the 65 classroom performance scores were correlated with the 65 teacher facilitative functioning scores a Pearson Product Moment correlation coefficient of .33 was obtained—significant at or beyond the .01 level of confidence for this sample. This finding suggests that teacher facilitative functioning is directly related to student classroom performance.

In order further to understand the nature of the relationship between teacher facilitative functioning and student classroom performance, an analysis of variance was undertaken. Two contrasting groups of classrooms were identified—those where average teacher facilitative functioning scores were below the mean of all 68 teacher facilitative functioning scores, and those where average teacher facilitative functioning scores were above the mean of the 68 classroom teacher facilitative functioning scores. For each of these two contrasting groups the means and standard deviations of the students' classroom performance scores were calculated. These data, along with an analysis of the variance of these classroom means within and between these groups are displayed in Table 3. As can be seen by the results of this analysis, the means of the students' classroom performance scores are significantly different for these two contrasting groups. This finding supports the research hypothesis.
Table 3
Differences Between Student Classroom Performance Scores in the Classrooms of More Facilitative and Less Facilitative Teachers

<table>
<thead>
<tr>
<th>Group</th>
<th>Size</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less facilitative</td>
<td>35</td>
<td>3.17</td>
<td>.39</td>
</tr>
<tr>
<td>More facilitative</td>
<td>30</td>
<td>3.37</td>
<td>.38</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean squares</th>
<th>Degrees of freedom</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>.65</td>
<td>1</td>
<td>4.45</td>
<td>.04*</td>
</tr>
<tr>
<td>Within</td>
<td>.15</td>
<td>63</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at or beyond the .05 level of confidence.

It was noted earlier that a student's academic history may be a predictor of his or her success in present courses. If it occurred that within the classrooms of more facilitative teachers there was a misallocation of predominantly successful students, and vice versa, then the differences in classroom means of students' classroom performance might be attributal to this fact. By the analysis of covariance test, the classroom means of these classroom performance scores are adjusted to account for the covariance of student propensity for academic achievement with these scores.

When the means of the classroom performance scores of these contrasting groups of classrooms were adjusted to account for the covariance of students' propensity for academic achievement, it was
ascertained that the differences between these classroom performance scores were no longer significant. The data displayed in Table 4 confirm that once the covariance of student propensity for academic achievement with student classroom performance is accounted for, the differences in the adjusted classroom performance means for the two contrasting groups of classrooms become insignificant.

Table 4
Differences Between the Mean Classroom Performance Scores (After Adjusting for Covariate Influence) in the Classrooms of More Facilitative and Less Facilitative Teachers

<table>
<thead>
<tr>
<th>Group</th>
<th>Size</th>
<th>Unadjusted mean</th>
<th>Adjusted mean</th>
<th>Covariate mean historical performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less facilitative</td>
<td>35</td>
<td>3.17</td>
<td>3.28</td>
<td>3.14</td>
</tr>
<tr>
<td>More facilitative</td>
<td>30</td>
<td>3.37</td>
<td>3.25</td>
<td>3.51</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean squares</th>
<th>Degrees of freedom</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>.006</td>
<td>1</td>
<td>.07</td>
<td>.80</td>
</tr>
<tr>
<td>Error</td>
<td>.091</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Before it is concluded that there is no relationship between teacher facilitative functioning and student classroom performance (once student propensity for academic achievement is accounted for) other possible interpretations of these findings deserve attention. If it is the case that there is actually a difference in the average
propensity for academic achievement between those classrooms of more and less facilitative teachers, then those differences apparently account for the observed differences in the quality and quantity of the work produced by the students within these contrasting groups of classrooms. However, it is possible that these reported differences in propensities for academic achievement are unsubstantiated in reality. That is to say that there may actually be no real difference in propensity for academic achievement between the students of teachers perceived to be more and less facilitative.

To determine if differences in student propensity for academic achievement reported by more and less facilitative teachers were real or perceived, another index of student propensity for academic achievement was gathered in the school district which provided such data. Students from 22 of the 25 classes which participated in this research from one high school had taken the Differential Aptitude Test (DAT) (Bennett, Seashore, & Wesman, 1973) as ninth graders. Among other purposes, this test provides a measure of students' verbal reasoning (VR) and numerical ability (NA). Taken in combination, these scores have been found to highly correlate with student overall GPA and student performance on standard achievement tests—.54 and .78, respectively (Bennett et al., 1973). Therefore, students' VR + NA scores were taken as an index of their overall potential for classroom success. These scores were reported in percentiles. They were converted to Normal Curve Equivalency scores so that analyses based on their aggregation and averaging would be appropriate (SRA, 1979).
As it occurred in this sample, there were no real differences between more and less facilitative classrooms with respect to students' DAT scores. The mean DAT scores for those classrooms whose teachers were determined to be more facilitative was 50.0 (SD = 5.2), while the mean DAT score for those classrooms whose teachers were determined to be less facilitative was 50.1 (SD = 3.7)! This suggests that the differences in student propensity for academic achievement reported by more and less facilitative teachers was NOT substantiated in reality.

It appears then, that while looking at students with the same propensity for academic achievement, the more facilitative teacher sees more potential while the less facilitative teacher sees less potential in those students.

This is a highly provocative finding—the implications of which will be discussed in the next chapter of this dissertation. For the time being, however, this finding causes a return to the original question, "Is there any relationship between the facilitative teacher-student relationship and student classroom performance?" By discovering that more facilitative teachers are more generous in their estimates of student potential and less facilitative teachers are less generous in these estimates, one might suppose that these tendencies would contaminate teacher reports of classroom performance. Without objective measures of actual student performance in these classrooms, it is impossible to accurately determine if students actually performed better in the classrooms of the more facilitative teachers (than they did in the classrooms of the less facilitative teachers)
or if their reported performances within these more facilitative
classes were spuriously inflated by teacher generosity (while their
reported performances within these less facilitative classrooms were
spuriously depressed by teacher denigration). However, the finding
here that more facilitative teachers see more potential in students
provides a springboard to speculation that these enlarged assessments
of student potential might lead to other teacher and student behav­
iors which could result in the fulfillment of these aggrandizements.

Levels of Cognitive Functioning

In this section of this dissertation the relationship between
teacher facilitative functioning and classroom cognitive emphasis
will be explored. One of the research hypotheses of this disserta­
tion holds that teacher facilitative functioning and classroom levels
of cognitive functioning are directly related. Levels of cognitive
functioning is a term which is defined in relation to Bloom's (Bloom
et al, 1956) taxonomy of cognitive objectives. Briefly, it is
largely accepted that there are shallower and deeper understandings
of a subject of study. By taxonomizing cognitive objectives, the
nature of these shallower and deeper understandings are defined.
Bloom offers seven discrete levels of cognitive learning objectives—
memorization, translation, interpretation, application, analysis,
synthesis, and evaluation. As one moves from memorization to evalua­
tion the depth of understanding is increased. Of course, not all
students come to know a subject deeply. Not all teachers emphasize
a depth of understanding with respect to the subjects they teach.
Yet, it is commonly accepted that a deeper understanding of subject matter is desirable, and that mastering higher level cognitive objectives is essentially the process by which one attains this deeper understanding.

In order to ascertain which cognitive objectives were receiving emphasis in classrooms, students in the 68 classrooms which participated in this study completed a modified version of the Class Activities Questionnaire (Steele, 1971). This questionnaire has two statements that are supposed to correspond to each of Bloom's seven levels of cognitive functioning. Students' agreement with a statement is taken as indication that the activity described is occurring—from which it is inferred that a certain level of cognitive functioning associated with that activity is occurring. An aggregation of a class's response is supposed to yield a profile of the class with respect to cognitive emphasis.

An item and factor analysis of the students' responses to this instrument suggests that it is not a reliable instrument by which to ascertain if discrete levels of cognitive functioning are or are not occurring. However, when discrete levels of cognitive functioning are combined to form two broad levels of cognitive functioning—higher and lower level cognitive functioning—the instrument's reliability falls within acceptable limits.

Lower level cognitive functioning consists of the three lowest cognitive objectives—memorization, translation, and interpretation. It is assumed that some emphasis on classroom activities associated with lower level cognitive objectives occurs in all classrooms. In
this analysis, the relationship between teacher facilitative functioning and lower level cognitive emphasis is discussed.

Higher level cognitive functioning consists of the four highest cognitive functions—application, analysis, synthesis, and evaluation. It is expected that in those classrooms where higher level cognitive objectives are emphasized students are becoming more deeply acquainted with the subject matter. In this analysis the relationship between teacher facilitative functioning and higher level cognitive functioning is also discussed.

When the 56 classroom averages with respect to lower level cognitive functioning were correlated with the 56 classroom averages with respect to teacher facilitative functioning, a correlation coefficient of -.53 was obtained. That is to say that there was an inverse relationship between teacher facilitative functioning and classroom emphasis on lower level cognitive tasks—with more facilitative teachers placing less emphasis on lower level cognitive tasks than their less facilitative colleagues. This is consistent with the expectation of this research. Less facilitative teachers were asking their students to do more class activities associated with memorization and other lower level cognitive objectives than were more facilitative teachers.

It cannot be said by the findings of this research, however, that the more facilitative teachers are emphasizing more higher level cognitive tasks than are less facilitative teachers. When the 56 classroom averages with respect to higher level cognitive functioning were correlated with the 56 classroom averages of teacher facilitative
functioning, a correlation of -.21 was obtained—not significant at
the .05 level of confidence. By this finding it can only be said
that the null hypothesis—that there is no relationship between
higher level cognitive emphasis and teacher facilitative functioning—
cannot be rejected.

Analyses of the variance of the mean scores within and between
the classrooms of less facilitative and more facilitative teachers
essentially confirm the findings reported above. With respect to
lower level cognitive functioning, significant differences between
the means of these two contrasting groups of classrooms were found
(see Table 5). No significant differences were found between the
means of these two contrasting groups with respect to higher level
cognitive functioning (see Table 6). By these findings it may be
said that more facilitative teachers place less emphasis on lower
level cognitive tasks than do less facilitative teachers; however, it
may not be said that there is any real difference in classroom empha-
sis with respect to higher level cognitive tasks between more facili-
tative and less facilitative teachers.

These findings should not be accepted without some caution, how-
ever. That factor and item analyses demonstrated inconsistencies be-
tween the way students were expected to respond to these items and
the way they actually responded to them is one reason to cautiously
interpret findings founded on these responses. Moreover, the fact
that correlations between teacher facilitative functioning and both
lower level and higher level cognitive emphasis were negative is rea-
son to wonder about the legitimacy of these findings.
Table 5
Differences Between Lower Level Cognitive Emphasis in the Classrooms of More Facilitative and Less Facilitative Teachers

<table>
<thead>
<tr>
<th>Group</th>
<th>Size</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less facilitative</td>
<td>31</td>
<td>2.33</td>
<td>.12</td>
</tr>
<tr>
<td>More facilitative</td>
<td>25</td>
<td>2.21</td>
<td>.11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean squares</th>
<th>Degrees of freedom</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>.20</td>
<td>1</td>
<td>14.77</td>
<td>.00*</td>
</tr>
<tr>
<td>Within</td>
<td>.01</td>
<td>54</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significant at or beyond the .05 level of confidence.

Table 6
Differences Between Higher Level Cognitive Emphasis in the Classrooms of More Facilitative and Less Facilitative Teachers

<table>
<thead>
<tr>
<th>Group</th>
<th>Size</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less facilitative</td>
<td>31</td>
<td>2.38</td>
<td>.17</td>
</tr>
<tr>
<td>More facilitative</td>
<td>25</td>
<td>2.33</td>
<td>.17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean squares</th>
<th>Degrees of freedom</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>.03</td>
<td>1</td>
<td>1.06</td>
<td>.31</td>
</tr>
<tr>
<td>Within</td>
<td>.03</td>
<td>54</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Essentially, by their responses to the CAQ, students disagreed that lower level cognitive tasks were being emphasized in the classrooms of those teachers they viewed as more facilitative; they also disagreed that higher level cognitive tasks were being emphasized in these classrooms. On the other hand, students in the classrooms of teachers they viewed as less facilitative were, by their responses to the CAQ, agreeing that lower level cognitive tasks were being emphasized in these classrooms; at the same time they agreed that higher level cognitive tasks were being emphasized in these classrooms.

Perhaps the statements which comprise the CAQ are stated in such a way that students generally associate each with the "task mastering" of school. Perhaps the affective connection with "task mastering" is generalized as an unpleasant feeling. If students in the classrooms of more facilitative teachers experience school as a pleasant place (and these findings support this contention), then they may be likely to disagree with statements on the CAQ (which they may feel have this unpleasant connotation). Perhaps they cannot bring themselves to admit that anything resembling unpleasantness is occurring in this class they like so much.

However, even if there is some tendency for the students in the classrooms of the more facilitative teachers to disagree with statements on the CAQ (and a tendency for students in the classrooms of less facilitative teachers to agree with these statements) for some irrational reason(s), the magnitude of the correlation between teacher facilitative functioning and lower level cognitive emphasis probably cannot be totally accounted for by this tendency. It is
more likely the case that there is some inverse relationship between teacher facilitative functioning and lower level cognitive emphasis that is independent of any tendencies students might have to describe the classrooms of more facilitative teachers as more pleasant places than the classrooms of less facilitative teachers.

If there were some modest relationship between teacher facilitative functioning and higher level cognitive emphasis, the tendency of the students of more facilitative teachers to disagree with all items on the CAQ (and the tendency of the students of less facilitative teachers to agree with these items) for some irrational reason(s) could have obscured the finding of that relationship in this instance.

Inasmuch as no data were collected which could ascertain the extent to which students' affection or dislike for a class may have distorted their responses to this instrument, it is impossible to account for any effects this hypothesized distortion may have had on the findings of this research. Therefore, it may only be said—with appropriate caution—that by the findings of this research there appears to be an inverse relationship between teacher facilitative functioning and lower level cognitive emphasis. With this same caution, it may not be said that there is a relationship between teacher facilitative functioning and higher level cognitive emphasis.

Attendance

In this section of this dissertation the relationship between teacher facilitative functioning and student attendance is discussed. One of the research hypotheses of this study holds that teacher
facilitative functioning and class attendance are directly related.

Teachers in this study were asked to report the number of days each student in their classes missed class during the first 9 weeks of the second semester. This 9-week period coincided with the first marking period of the second semester. Teachers had already recorded absences for this period for the purposes of marking report cards. It was believed that by asking teachers to report these already tabulated attendance data it was more likely that they would respond to this request than if they were asked to tabulate and report attendance data for some longer period of time which didn't coincide with some end of the marking period. As it occurred in this study, attendance data were reported in only 61 of the 68 classrooms which otherwise participated in this research.

The total number of absences in a classroom were divided by the number of students within the classroom for which these data were provided. This number was taken as the average number of absences per classroom. When the 61 classroom averages with respect to absenteeism were correlated with the 61 classroom averages with respect to teacher facilitative functioning, a Pearson Product Moment correlation coefficient of -.05 was obtained. This coefficient is insignificant at the .05 level of confidence for an n of 61. By this finding it is not possible to reject the null hypothesis—which states that teacher facilitative functioning and student attendance are unrelated.

An analysis of the variance of the mean absences within and between the classrooms of less facilitative and more facilitative teachers essentially confirms the finding of the test of correlational
significance—that teacher facilitative functioning cannot be said to be related to student attendance. Table 7 displays the means and standard deviations for the two contrasting groups of classrooms—those with more facilitative teachers and those with less facilitative teachers.

Table 7

Differences Between Student Absenteeism in the Classrooms of More Facilitative and Less Facilitative Teachers

<table>
<thead>
<tr>
<th>Group</th>
<th>Size</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less facilitative</td>
<td>34</td>
<td>2.78</td>
<td>1.11</td>
</tr>
<tr>
<td>More facilitative</td>
<td>27</td>
<td>2.56</td>
<td>.80</td>
</tr>
</tbody>
</table>

Mean Degrees of Freedom

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean squares</th>
<th>Degrees of freedom</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>.76</td>
<td>1</td>
<td>.78</td>
<td>.38</td>
</tr>
<tr>
<td>Within</td>
<td>.97</td>
<td>59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There is evidence, however, that the relationship between teacher facilitative functioning and student attendance may be different for some special group(s) of learners. When individual student responses were examined, and students were grouped (as individuals now, not as classrooms) according to the five possible levels of propensity for academic achievement, an analysis of variance found significant differences between mean absences for the five groups ($F(4,1131) = 23.06; F = .000$). Further, when all of the students were grouped by grade
level, an analysis of variance found significant differences between mean absences for the four groups ($F(3,1132) = 3.50; P = .021$).

Taken in concert, these findings suggest that older students and students judged by their teachers to have a lower propensity for academic achievement are more likely to miss school than are younger students and students who are judged to have a greater propensity for academic achievement.

For the 315 students in this study who were juniors and seniors who were rated below average with respect to propensity for academic achievement, the correlation between their absenteeism and their perception of their teacher's facilitative functioning was $- .29$—significant at or beyond the .05 level of confidence. This suggests that for these students there is a relationship between their perceptions of their teacher's facilitative functioning and their class attendance.

Inasmuch as student grade level and propensity for academic achievement are covariates with student absenteeism, an analysis of covariance was undertaken in an effort to ascertain if adjusting for their covariance with absenteeism would effect the mean absenteeism of the two contrasting groups in any significant way. The results of that analysis are displayed in Table 8. By these results it can be seen that the means of the two contrasting groups did shift in directions that would indicate that student grade level and student propensity for academic performance (called "historical performance" in Table 8) do influence absenteeism, and that when that influence is accounted for the magnitude of the difference between mean absenteeism
Table 8
Differences Between Mean Absenteeism (After Adjusting for Covariate Influence) in the Classrooms of More Facilitative and Less Facilitative Teachers

<table>
<thead>
<tr>
<th>Group</th>
<th>Size</th>
<th>Unadjusted mean</th>
<th>Adjusted mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less facilitative</td>
<td>34</td>
<td>2.78</td>
<td>2.85</td>
</tr>
<tr>
<td>More facilitative</td>
<td>27</td>
<td>2.56</td>
<td>2.47</td>
</tr>
</tbody>
</table>

Covariate means

<table>
<thead>
<tr>
<th>Group</th>
<th>Grade level</th>
<th>Historical performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less facilitative</td>
<td>1.82</td>
<td>3.13</td>
</tr>
<tr>
<td>More facilitative</td>
<td>2.33</td>
<td>3.48</td>
</tr>
</tbody>
</table>

Source of Mean squares

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean squares</th>
<th>Degrees of freedom</th>
<th>F</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2.04</td>
<td>1</td>
<td>2.34</td>
<td>.13</td>
</tr>
<tr>
<td>Error</td>
<td>.87</td>
<td>59</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
for the more facilitative and less facilitative teachers increases. However, the magnitude of these differences does not change enough to cause a reconsideration of the conclusion that the null hypothesis—which states that there are no significant differences between the means for absenteeism of these two contrasting groups—cannot be rejected in this instance.

Two methodological shortcomings in this investigation of the relationship between teacher facilitative functioning and student attendance may account for the inability to reject the null hypothesis in this study. First, when teachers reported the absences of their students, few reported any absences for those who had dropped out of their classes—they simply wrote the word "dropped" where the number of absences was to have been reported, or they included no information at all in that space. Knowing the number of days those students missed class before they dropped out would have been useful to the purposes of this study. Second, using attendance data for an entire semester (or year, if the course spanned the entire school year) would have been preferentially to collecting those data for only the first half of a semester. It is entirely possible that student attendance patterns are different during the last half of a semester than they are during the first half of a semester. Had a whole semester's attendance data been collected for all participating students, it's possible that the findings of this research would have been different.

As it was conducted, however, the evidence found in this study could not be used to reject the null hypothesis—which states that
teacher facilitative functioning and student attendance are unrelated. However, for those juniors and seniors with below average propensities for academic achievement, a direct relationship between their perceptions of their teacher's facilitative functioning and their class attendance was found.

Summary

Essentially, the defensible findings of this research are as follows:

1. There is a direct relationship between student perceptions of their teacher's facilitative functioning and the self-concepts of students within those teachers' classrooms.

2. There is a direct relationship between student perceptions of their teacher's facilitative functioning and (teacher estimates of) student classroom performance. There is also a direct relationship between student perceptions of their teacher's facilitative functioning and (teacher estimates of) student propensity for academic achievement. When (teacher estimates of) students' classroom performances are adjusted to account for the covariance of (teacher estimates of) student propensity for academic achievement with those performances, the resultant relationship between student perceptions of teacher facilitative functioning and (teacher estimates of) classroom performance is insignificant. However, comparison of teacher estimates of student propensity for academic achievement with objective measures of student ability suggests that more facilitative teachers see more potential in students while less facilitative
teachers see less potential in students who actually have equal ability!

3. There is an inverse relationship between student perceptions of teacher facilitative functioning and emphasis on class activities associated with lower level cognitive objectives. However, there is no evidence which may be used to reject the null hypothesis—which states that there is no relationship between student perceptions of teacher facilitative functioning and emphasis on class activities associated with higher level cognitive objectives.

4. There is also no evidence which may be used to reject the null hypothesis which states that there is no relationship between student perceptions of teacher facilitative functioning and student attendance at the classroom level. There is, however, a direct relationship between student perceptions of teacher facilitative functioning and student attendance for those juniors and seniors told to have below average propensities for academic performance.

In the next chapter, a more detailed summary of these findings and a discussion of them will be entertained.
CHAPTER V

SUMMARY AND CONCLUSION

Summary

In this study it was hypothesized that teacher facilitative functioning—characterized by teacher genuineness, teacher positive regard, and teacher empathy—would be directly related to four dependent outcomes of the educational process—(a) student self-concept declarations, (b) student achievement, (c) classroom levels of cognitive functioning, and (d) student attendance. Over 1,600 students from required courses in the high schools of four school districts participated in this study.

During the first 5 days of the second semester of the 1980-81 school year the students from the 68 classrooms which qualified for participation in this study completed the Barrett-Lennard Relationship Inventory. With this instrument, students' perceptions of their teachers' regard for them, empathy for them, and genuineness were measured. The scores from these three subscales were found to be very highly intercorrelated. The three subscale scores were, therefore, aggregated to become a measure of teacher facilitative functioning.

On this same visit, students were asked to describe themselves using Osgood's (1957) Semantic Differential (SD) technique. They described themselves in six different contexts: "Me as I am," "Me as
I wish I were," "Me as I am in this school," "Me as I am in this class," "Me as I am to those who like me," and "Me as I am to those who dislike me." The "Me as I am in this class" SD was taken as an index of the students' classroom self-concepts. The other SD's were used as tests of the overall ability of these SD's to differentiate between student's self-concepts in contexts where it would be expected that student self-concepts would be different. These SD's performed admirably in this respect. The other SD's were also administered so that potentially contaminating and covariate information could be gathered. The "Me as I am" and the "Me as I am in school" SD's were found to be more highly correlated with the "Me as I am in this class" SD than were the remaining SD's which were administered. For this reason, these SD's were used in some analyses of covariance while the others were not.

Student's classroom achievement was measured by two indices. For all students, teachers used a 5-point Likert scale to report that the "quality" and the "quantity" of each student's work was either (1) way below average, (2) below but not way below average, (3) average, (4) above but not way above average, or (5) way above average. Teachers used this same scale to report their knowledge of each student's propensity for academic achievement—chiefly determined by their knowledge of the student's previous academic history.

Student performance on standardized achievement tests (ordained by their respective school boards to be reasonable indices of their cognitive gains in their respective academic areas) in 22 of the 68 classrooms which participated in this study, was taken as a second
index of student achievement. When it was later discovered that the identical subtest of Science Research Associate's "Achievement Series" was used as an index of achievement in such widely diverse classes as ninth grade Michigan history and 11th grade United States history in one school district, it was decided that these indices were not valid measures of classroom achievement.

Levels of cognitive functioning were inferred by students' responses to a modified version of the Class Activities Questionnaire (Steele, 1971). This instrument lists two statements that are supposed to relate to each of the seven levels of cognitive functioning taxonomized by Bloom et al. (1956). Factor and item analyses of these students' responses to this instrument suggest that their responses are interpretable only in the broadest sense—as measures of the two general levels of cognitive functioning: "higher" and "lower" levels of cognitive functioning. This instrument was administered during the 15th week of the second semester, along with a second administration of the "Me as I am in this class" SD, and a second administration of the Barrett-Lennard Relationship Inventory.

Attendance was measured by asking teachers to report the number of days each student who participated in this study missed class during the first 9 weeks of the second semester. For a detailed breakdown of the schedule of data collection and an identification of the classrooms which responded to each of these instruments, please see Table 10 in Appendix C.

The findings of this research support the contention that teacher facilitative functioning is directly related to students'
self-concept declarations within classrooms. Essentially, students in the classrooms of teachers they viewed as more facilitative (offering more genuinerness, empathy, and positive regard) said that within those classrooms they felt more positive about themselves (more nearly: smart, good, active, able, happy, alive, strong, valuable, relaxed, and successful) than did students in the classrooms of teachers they viewed as less facilitative. Even when the mean self-concept scores for two contrasting groups of classrooms (those whose students placed their teacher above, and those who placed their teacher below the average level of facilitative functioning for all teachers) were adjusted to account for their covariance with other influential variables, the relationship between teacher facilitative functioning and student self-concept declarations remained direct. There is little room for equivocation with respect to this finding.

In every other case—classroom performance, levels of cognitive emphasis, and student attendance—there were findings that both supported the research hypotheses, and findings that did not permit the unequivocal rejection of the null hypotheses.

For instance, though it was determined that there was a direct relationship between teacher facilitative functioning and student classroom performance, when classroom performance scores were adjusted to account for the covariance of student propensity for academic achievement with this outcome, it appeared as if the relationship between teacher facilitative functioning and classroom performance was, actually, nonexistent. Since both the estimates of student classroom performance and propensity for academic achievement were provided by
teachers, it was wondered if the positive covariance of teacher facilitative functioning with both these variables meant that more facilitative teachers have a more positive view of students than do less facilitative teachers. An examination in one school district of students' verbal reasoning and numerical ability scores on the Differential Aptitude Test suggests that, in fact, there were no real differences between the students of more and less facilitative teachers with respect to student propensity for academic achievement. It could be said that by their greater expectations for students' classroom performance, more facilitative teachers influence students toward that outcome; while the less facilitative teachers' diminished expectations for student performance influence students toward that outcome. However, inasmuch as there were no objective measures of actual learning performance obtained in this research, it is impossible to determine if the students in the classrooms of more facilitative teachers actually performed better than the students of less facilitative teachers. Therefore, it is most accurate to say that the true nature of the relationship between teacher facilitative functioning and student classroom performance was not discernable by the findings of this research. If this research were repeated, and an objective measure of student classroom performance were obtained, it would be possible to ascertain if the direct relationship between teacher facilitative functioning and student classroom performance observed in this research was real or a function of teacher outlook.

With respect to classroom levels of cognitive functioning, there is, again, evidence which is only equivocally supportive of these
research hypotheses (which contend that teacher facilitative functioning and classroom levels of cognitive emphasis are directly related). It does seem to be the case that the more facilitative teachers place less emphasis on class activities associated with lower level cognitive objectives than do their less facilitative counterparts. However, with respect to higher level cognitive functioning, the evidence collected here does not permit rejection of the null hypothesis (which states that teacher facilitative functioning and emphasis on class activities associated with higher level cognitive objectives are unrelated). It is possible that students' affection or dislike for their classes distorted their responses to the instrument used to assess classroom cognitive emphasis in this research. A different methodology might have enabled a more valid measure of this dimension of classroom life. For example, a review of teacher-made tests by raters trained to identify levels of cognitive learning objectives would have yielded cognitive emphasis scores which might have been more reliable than the ones obtained in this study. In light of the shortcomings of the instrument used in this research, and the unreliable manner in which students responded to that instrument, it may still be the case that the true nature of the relationship between teacher facilitative functioning and levels of cognitive emphasis in classrooms was not discerned by the findings of this research.

As was the case with student classroom performance and classroom levels of cognitive emphasis, there is room to be encouraged that teacher facilitative functioning may be related to student classroom attendance, but there is also room to equivocate. For classrooms as
as a whole, teacher facilitative functioning was not found to be significantly related to classroom attendance. However, the attendance of that group of students most likely to miss class—juniors and seniors and those judged below average with respect to propensity for academic achievement—was directly related to student perceptions of teacher facilitative functioning. This study used only a 9-week period within which to collect attendance data. Furthermore, many teachers did not report attendance data for those students who eventually dropped their classes. These shortcomings probably contributed to the indefinite findings of this portion of this study. Future studies should collect attendance data for some period of time at least one semester long; and some mechanism for accounting for the attendance behavior of those who eventually drop out of classes should be part of future research designs.

Conclusion

For over two decades, Carl Rogers has been claiming that by behaving more facilitatively in their relationships with students, teachers could inaugurate an educational revolution (Rogers, 1959, 1961, 1969, 1974). During this time span, researchers have been trying to identify the educational territory which may be affected by this revolution. In secondary schools especially, it has been difficult to discern many instances in which educational outcomes have been related to teacher facilitative functioning in any significant way.
By this research it has become known that students within the classrooms of more facilitative teachers see themselves more positively than do students within the classrooms of less facilitative teachers. Moreover, it has become known that more facilitative teachers see more potential in students, while less facilitative teachers see less potential in students who actually possess equal ability. Since other explanations of these findings were explored and dismissed through various analyses, it may further be inferred that the facilitative behavior of teachers brings about the elevation of student self-esteem.

Taken in concert, these findings suggest that there is a process by which more facilitative teachers cultivate self-esteem in their students. The more facilitative teachers actually see students in a more positive light than do less facilitative teachers. The student perceives that the more facilitative teacher possesses an elevated opinion of the student's worth, and responds by experiencing himself (or herself) in a more positive light.

Beyond teaching students the content of the course of instruction, it appears that teachers are also teaching students "non-curricular" lessons. In this case, it can be demonstrated that teachers are teaching students about their relative worth and competence as persons—with less facilitative teachers teaching students they are less valuable, competent, etc., and more facilitative teachers helping students learn they are worthwhile persons.

It is still a matter of speculation, at least with respect to secondary education, as to whether or not students' enhanced sense
of self-esteem, or teacher facilitative functioning, lead to increased productivity with respect to students' curricular gains. There are those who would contend that enhanced self-esteem is the harbinger of a host of other positive outcomes of living and learning (Wylie, 1974a), while others might claim that a positive sense of self is the desired prize in living, regardless of how that self-prizing manifests itself in the one's achievement behavior (Rogers, 1959). Until further research is undertaken which sheds light on the true nature of the relationship between teacher facilitative functioning and student academic achievement, one's faith in the power of the teacher-student relationship to bring about greater student achievement must be based on other than the evidence presented in research which has been completed to date.
Appendix A

Instrumentation¹

¹These instruments were printed in red ink on "mark-sense" machine scorable answer sheets. The areas blocked out prevented respondents from placing marks on the answer sheets in areas which would have rendered their responses uninterpretable. They have also been reduced one-third to meet margin requirements for this dissertation.
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99-107

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Class Emphasis Questionnaire

1. Remembering or recognizing information is the student's main job.
2. A central activity is to make judgments of good/bad, right/wrong, and explain why.
3. Students actively put methods and ideas to use in new situations.
4. Students are expected to go way beyond the information given to see what is implied.
5. Great importance is placed on logical reasoning and analysis.
6. Students are urged to build on what they have learned to produce something brand new.
7. Restating ideas in your own words is a central concern.
8. Using logic and reasoning processes to think through complicated problems (and prove the answer) is a major activity.
9. Great emphasis is placed on memorizing.
10. A central concern is practicing methods in life-like situations to develop skill in solving problems.
11. Students are expected to read between the lines to find trends and consequences in what is presented.
12. Inventing, designing, composing, and creating are major activities.
13. The student's major job is to make judgments about the value of issues and ideas.
14. Great importance is placed on explaining and summarizing what is presented.

Response key: 1=Strongly Agree (SA); 2=Agree (A); 3=Disagree (D); 4=Strongly Disagree (SD)

CLASS EMPHASIS QUESTIONNAIRE

THIS IS FORM 6
DEAR TEACHER:

HERE COMES THE FUN PART. I NEED INFORMATION FROM YOU THAT ONLY YOU CAN PROVIDE FOR ME.

ON THE FOLLOWING PAGE(S) YOU'LL FIND A LIST OF INITIALS FOR EACH OF THE CLASSES OF YOURS THAT ORIGINALLY PARTICIPATED IN THIS STUDY. THESE INITIALS ARE AS THE STUDENT'S RECORDED THEM AT THE TIME OF TESTING. IF IT IS NOT CLEAR TO YOU WHO THE INITIALS REFER TO, YOU SHOULD IGNORE THAT ENTRY. FOR ALL OTHER STUDENTS, I NEED FOUR PIECES OF INFORMATION--ABOUT (1) THE QUANTITY OF THEIR WORK, (2) THE QUALITY OF THEIR WORK, (3) THEIR PROPENSITY FOR ACADEMIC ACHIEVEMENT, AND (4) THE NUMBER OF TIMES THEY WERE ABSENT FROM YOUR CLASS DURING THE FIRST 9 WEEKS OF THIS SECOND SEMESTER.

YOU WILL USE THE FOLLOWING SCALE TO DESCRIBE EACH OF THE STUDENTS YOU CAN IDENTIFY WITH RESPECT TO 'QUALITY','QUANTITY', AND 'PROPENSITY FOR ACADEMIC ACHIEVEMENT'.

1—WAY BELOW AVERAGE
2—BELOW AVERAGE, BUT NOT WAY BELOW AVERAGE
3—AVERAGE
4—ABOVE AVERAGE, BUT NOT WAY ABOVE AVERAGE
5—WAY ABOVE AVERAGE

'QUANTITY OF WORK' REFERS TO THE AMOUNT OF WORK THE STUDENT HAS PRODUCED FOR YOU THIS SEMESTER UP TO THIS POINT IN TIME. 'QUALITY OF WORK' REFERS TO THE DEGREE TO WHICH THE STUDENT'S WORK MEETS YOUR EXPECTATIONS FOR ACCURACY OF CONTENT OR THOROUGHNESS OF ASSIGNMENT COMPLETION. 'PROPENSITY FOR ACADEMIC ACHIEVEMENT' REFERS TO BOTH THE ABILITY OF THE STUDENT AND THE TENDENCY OF THE STUDENT TO USE OR SQUANDER THAT ABILITY, AS THE CASE MAY BE. FOR EXAMPLE: A STUDENT MAY HAVE ABILITY BUT NOT USE IT WHILE THE STUDENT WITH LESS ABILITY MAY TRY HARDER AND, CONSEQUENTLY, BOTH MAY EARN A '3' RATING--AN AVERAGE PROPENSITY TO ACHIEVE. ACTUALLY, THE BEST INDEX YOU HAVE FOR JUDGING THE STUDENT'S PROPENSITY FOR ACADEMIC ACHIEVEMENT IS YOUR KNOWLEDGE OF THEIR PREVIOUS ACADEMIC HISTORY. YOU MIGHT SAY TO YOURSELF, 'IN SCHOOL AS A WHOLE, THIS STUDENT TYPICALLY PERFORMS (AND USE THE SCALE TO HELP YOU FINISH THE SENTENCE)'.

AS FAR AS THE REPORTING OF THE DAYS ABSENT FROM YOUR CLASS DURING THE FIRST 9 WEEKS OF THIS SECOND SEMESTER, USE THE NUMBER OF ABSENCES YOU REPORTED ON THE STUDENT'S 3RD QUARTER REPORT CARD.

THIS WILL UNDOUBTEDLY BE THE MOST TIME-CONSUMING REQUEST I WILL MAKE OF YOU. FOR ALL INTENTS AND PURPOSES, YOUR INVOLVEMENT IN THIS STUDY WILL END WHEN THIS IS OVER. PLEASE MAIL THESE BACK TO ME (VIA R.E.C.) THEN YOU ARE DONE.

IT'S HARD TO BELIEVE THAT ANY SINCERITY CAN ACCOMPANY A NOTE TYPED BY A COMPUTER—BUT THIS DOES, IN THIS CASE. I AM SINCERELY GRATEFUL FOR YOUR HELP WITH THIS STUDY. I'LL BE IN TOUCH PERSONALLY, SOON.

SINCERELY,

P.S. THERE ARE FOUR COLUMNS NEXT TO YOUR LIST OF INITIALS. THE FIRST IS HEADED 'QUANTITY', THE SECOND 'QUALITY', THE THIRD 'PROPENSITY', AND THE FOURTH 'ABSENCES'. PLEASE RECORD THE APPROPRIATE NUMBERS ACROSS FROM THE STUDENT'S INITIALS UNDER THE APPROPRIATE COLUMN.
Teacher Control Variables Data Sheet

1. I surveyed your _______________________ hour sections. By section, what percentage of the students had you as their teacher during the first semester? ___:___% ___:___% ___:___% ___:___%  

2. How many years have you been employed as an educator?  

3. Please list the degrees you hold and name the institution from which you earned each. (Any degree that you are within 9 hours of earning you may list as earned.)

<table>
<thead>
<tr>
<th>Degree held</th>
<th>Major/Minor</th>
<th>Institution</th>
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<tbody>
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</table>

4. How many college or university credits have you earned taking courses that you would cluster under the title "human relations training courses"? ________________________

5. In your in-service experience, how many hours have you participated in "human relations training" experiences? ______________

6. How old are you? (Please check one)

   - _____ 20-25
   - _____ 26-30
   - _____ 31-35
   - _____ 36-40
   - _____ 41-45
   - _____ 46-50
   - _____ 51-55
   - _____ 56-60
   - _____ over 60
Appendix B

Letters to Participants
I am preparing to do my doctoral research. I need your assistance.

Like all of you, I am interested in helping students get the very most from their secondary education. Research on teacher behavior suggests that the quality of the teacher-student relationship is associated with desirable outcomes of the educational process. Most of that research has been done in elementary schools. I propose to conduct my research in grades 9-12. While the details of my proposal would be too cumbersome to present here, I need to make you aware of my wishes with respect to you.

First, I want to do my research in every academic classroom that meets the following criterion: The course is being taught to a heterogeneous cross section of students. That is to say that students of both sexes, from a cross section of socioeconomic backgrounds, who are of below average, average, and above average ability are assembled in the same class. These will probably be required courses or courses that are most often chosen from among several alternatives to fulfill a graduation requirement.

Secondly, I want to make two major observations in all of these classes. During the second week of the second semester (the week of February 2nd, 1981) I want to have students complete the Barrett-Lennard Relationship Inventory (Exhibit A) and a set of Semantic Differentials intended to locate their conceptions of "Me as I am to those who dislike me most", "Me as I am in school", "Me as I am in class", "Me as I wish I were", and "Me as I am to those who like me most" (Exhibit B). This initial data collection should take approximately one-half hour.

Fifteen weeks later I will re-enter these classrooms. Once again, students will complete the Relationship Inventory and the set of Semantic Differentials. In addition, they will complete a Class Activities Questionnaire (Exhibit C), which is intended to get a fix on levels of cognitive functioning in classrooms. While students are completing these forms, teachers will be indicating the degree to which the students mastered the course objectives, and will tell how many days the students missed that class. This collection will take the entire class period.

For nearly every class, that does it. From these data, I will be able to test the hypothesis that a better teacher-student relationship is associated with better feelings about one's self, higher levels of cognitive
functioning, greater achievement, and better attendance.

There's one rub. The techniques I'm using to assess the relationship, the levels of cognitive functioning, and academic achievement are not well validated. Therefore, I need to use more well established methods for assessing these outcomes in a small percentage of the classrooms.

What I propose is this: In ten classrooms—the five with the highest mean scores on the Initial Relationship Inventory and the five with the lowest mean scores on the Relationship Inventory—I would like to assess achievement more traditionally, with a standardized achievement test given during the third and seventeenth weeks of school. In addition, I will tape record one hour of instruction in each of these ten classrooms. The one hour will be comprised of three twenty minute tapes taken at randomly assigned times during the course of the second semester. The instructional tapes will be sent to Texas to the National Consortium for Humanizing Education where trained raters will rate the Relationship and the Levels of Cognitive functioning. By these extra measures, it can be established that the initial paper and pencil measures are (or are not) giving an accurate picture of the variables being studied.

While the pre and post testing will take most of two class periods, the taping will be innocuous and should not interrupt class. I hope you will agree that for the purposes of this study this extra investment is essential. What's more, that investment will likely be in not more than two classes in any one of the high school's I'm drawing samples from.

I'm aware that class time is a scarce and precious commodity. I'm asking you to let me take 1½ class periods during the second semester in all of your required or often chosen classes (about ten classes in each high school) and another two class periods in one or two classes (whose mean scores on the Relationship Inventory are among the five highest and five lowest).

I hope you believe this research is important enough to trade for this instructional time. I believe it can make an important contribution to the educational community's understanding of the relationship between the interpersonal skills of teachers and desirable outcomes of the educational process. I will be talking with you presently about your reaction to this request.

Respectfully,

Rick Benedict, Coordinator
Alternative Education Program

There will be no identification of students, teachers, or schools in the study. That information is worthless for the purposes of this study. Confidentiality is assured and the process of data collection will make the participants virtually anonymous.
January 5, 1981

(This letter was addressed to teachers)

I'm doing some research that is intended to check out the belief that the teacher-student relationship is a key factor in realizing important educational goals. For my study, I need to sample students from classrooms that meet some special criteria. The most important criterion is that any student, regardless of ability, background, or ambition, has an equal opportunity to be enrolled in the class. Some of your classrooms qualify for the study. I'd like to meet with you at your earliest convenience. At that time I will explain more thoroughly the details of this request.

Sincerely,

Rick Benedict

For the record: I'll need 2 class periods--one during the week of February 2nd, and one near the end of the semester. You will not need to be in the classroom during these observations, although you are welcome to stay. Finally, the results of the study will be kept in strict confidence. Short of an edict from the highest powers, you will not even be permitted to see the results from your classroom(s). Your superintendent and principal have given me permission to contact you.
Dear Students:

In the very near future you will have an opportunity to participate in a unique experience . . . you will be participating in a research study. In a way, you are representing all other students who are like you when you respond in this study. For this reason, it is very important that you take yourself seriously when you are participating in the study.

For your part in this research, you will be completing a few questionnaires. Your names will not be used, and no one will associate you with your responses.

If you take the time to respond as honestly and frankly as you can, you will be making a very important contribution to our understanding of the teaching-learning process. Thank you, in advance, for the seriousness with which you will take your participation in this study.

Sincerely,

Rick Benedict
Appendix C

Supportive Tables
### Table 9

Findings Using the Individual as the Unit of Analysis

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Size of Sample</th>
<th>Correlation with Relationship</th>
<th>One-way Analysis of Variance</th>
<th>One-way Analysis of Covariance</th>
<th>Covariates Used</th>
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</thead>
<tbody>
<tr>
<td>Classroom self-concept</td>
<td>1,254</td>
<td>.39**</td>
<td>F(1,1252) = 139.6**</td>
<td>F(1,929) = 43.4**</td>
<td>Total self School self Ability</td>
</tr>
<tr>
<td>Teacher est. of achiev'nt</td>
<td>1,120</td>
<td>.24**</td>
<td>F(1,1118) = 61.7**</td>
<td>F(1,1117) = 2.72</td>
<td>Ability</td>
</tr>
<tr>
<td>Standard achievement</td>
<td>295</td>
<td>.07</td>
<td>F(1,293) = 3.8</td>
<td>F(1,287) = .06</td>
<td>Ability</td>
</tr>
<tr>
<td>Lower level cognitive functioning</td>
<td>768</td>
<td>-.23</td>
<td>F(1,766) = 27.35**</td>
<td>F(1,694) = 9.79**</td>
<td>Ability High F</td>
</tr>
<tr>
<td>Higher level cognitive functioning</td>
<td>768</td>
<td>-.17</td>
<td>F(1,766) = 8.24**</td>
<td>F(1,694) = 6.74**</td>
<td>Ability Low F</td>
</tr>
<tr>
<td>Attendance</td>
<td>1,048</td>
<td>.03</td>
<td>F(1,1046) = .15</td>
<td>F(1,1044) = 1.85</td>
<td>Ability Grade level</td>
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**Significant at or beyond the .01 level of confidence.
Table 10
Participation Log

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<tr>
<th>School</th>
<th>Teacher</th>
<th>Level</th>
<th>Hour</th>
<th>Course</th>
<th>N</th>
<th>BLRI</th>
<th>SD 1-6</th>
<th>Taping</th>
<th>Teacher Estimates*</th>
<th>Attendance</th>
<th>Achievement</th>
<th>Test</th>
<th>CAQ</th>
<th>BLRI</th>
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<td>Week 14</td>
<td>Week 15</td>
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<td>5</td>
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<td>17</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>TASK - Eng.</td>
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*Quality of work, Quantity of work, Propensity for Academic Achievement
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